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Mr. Colman, in his Agricultural Tour, remarks, that his observations abroad convinced him that the Americans are the most extravagant people in the world; and the truth of the remark is corroborated by the experience of every sensible traveller that returns from Europe. The much greater facility of getting money here, makes us more regardless of system in its expenditure; and the income of many an estate abroad, amounting to twenty thousand dollars, is expended with an exactness, and nicety of calculation, that would astonish persons in this country, who have only an income of twenty hundred dollars. Abroad, it is the study of those who have, how to save; or, in the case of spending, how to get the most for their money. At home, it seems to be the desire of everybody to get—and, having obtained wealth, to expend it in the most lavish and careless manner.

There are, again, many who wish to be economical in their disbursements, but find, in a country where labor is one of the dearest of commodities, that everything which is attained by the expenditure of labor, costs so much more than they had supposed, that moderate "improvements"—as we call all kinds of building and gardening in this country—in a short time consume a handsome competence.

The fact, that in no country is labor better paid for than in ours, is one that has much to do with the success and progress of the country itself. Where the day-laborer is so poorly paid, that he must, of necessity, always be a day-laborer, it follows, inevitably, that the condition of the largest number of human beings in the state must remain nearly stationary. On the other hand, in a community where the industrious, prudent, and intelligent day-laborer can certainly rise to a more independent position, it is equally evident that the improvement of national character, and the increase of wealth, must go on rapidly together.

But, just in proportion to the ease with which men accumulate wealth, will they desire to spend it; and, in spending it, to obtain the utmost satisfaction which it can produce. Among the most rational modes of doing this, in the country, are building and gardening; and hence, every year, we find a greater number of our citizens endeavoring to realize the pleasures of country life.

Now *building* is sufficiently cheap with us. A man may build a *cottage ornee* for a few hundred dollars, which abroad would

cost a few thousands. But the moment he touches a spade to the ground, to plant a tree, or to level a hillock, that moment his farm is taxed three or four times as heavily as in Europe; and as he builds in a year, but "gardens" all his life, it is evident that his out-of-door expenses must be systemized, or economised, or he will find his income greatly the loser by it. Many a citizen, who has settled in the country with the greatest enthusiasm, has gone back to town in disgust at the unsuspected cost of country pleasures.

And yet, there are ways in which economy and satisfactory results may be combined in country life. There are always two ways of arriving at a result; and, in some cases, that mode least usually pursued is the better and more satisfactory one.

The price of the cheapest labor in the country generally, averages 80 cents to $1 per day. Now we have no wish whatever to lower the price of labor; we would rather feel that, by-and-by, we could afford to pay even more. But we wish either to avoid unnecessary expenditure for labor in producing a certain result, or to arrive at some mode of insuring that the dollar a day, paid for labor, shall be fairly and well earned.

Four-fifths of all the gardening labor performed in the eastern and middle states is performed by Irish emigrants. Always accustomed to something of oppression on the part of landlords and employers, in their own country, it is not surprising that their old habits stick close to them here; and, as a class, they require far more *watching* to get a fair day's labor from them than many of our own people. On the other hand, there is no workman who is more stimulated by the consciousness of working on his own account than an Irishman. He will work stoutly and faithfully, from early to late, to accomplish a "job" of his own seeking, or which he has fairly contracted for, and accomplish it in a third less time than if working by the day.

The deduction which experienced employers in the country draw from this, is, never to employ "rough hands," or persons whose ability and steadiness have not been well proved, by the day or month, but always by contract, piece or job. The saving to the employer is large; and the laborer, while he gets fairly paid, is induced, by a feeling of greater independence, or to sustain his own credit, to labor faithfully and without wasting the time of his employer.

We saw a striking illustration of this lately, in the case of two neighbors,—both planting extensive orchards, and requiring, therefore, a good deal of extra labor. One of them had all the holes for his trees dug by contract, of good size, and two spades deep, for six cents per hole. The other had it executed by the day, and by the same class of labor,—foreigners, newly arrived. We had the curiosity to ask a few questions, to ascertain the difference of cost in the two cases; and found, as we expected, that the cost in the day's work system was about ten cents per hole, or more than a third beyond what it cost by the job.

Now, whether a country place is large or small, there is always, in the course of the season, more or less *extra work* to be performed. The regular gardener, or workman, must generally be hired by the day or month; though we know instances of everything being done by contract. But all this extra work can, in almost all cases, be done by contract, at a price greatly below what it would otherwise cost. Trenching, subsoiling, preparing the ground for orchards or kitchen gardens, or even ploughing, and gathering crops, may be done very

much cheaper by contract than by day's labor.

In Germany, the whole family, including women and children, work in the gardens and vineyards; and they always do the same here when they have land in their own possession. Now in every garden, vineyard, or orchard, there is a great deal of light work, that may be as well performed by the younger members of such a family as by any others. Hence, we learn that the Germans, in the large vineyards now growing on the Ohio, are able to cultivate the grape more profitably than other persons; and hence, German families, accustomed to this kind of labor, may be employed by contract in doing certain kinds of horticultural labors, at a great saving to the employer.

Another mode of economising, in this kind of expenditure, is by the use of all possible *labor-saving machines.* One of our correspondents,—a practical gardener,—recommended, in our last number, that the kitchen garden, in this country, in places of any importance, should always be placed near the stables, to save trouble and time in carting manure; and should be so arranged as to allow the plough and cultivator to be used, instead of the spade and hoe. This is excellent and judicious advice, and exactly adapted to this country. In parts of Europe where garden labor can be had for 20 cents a day, the kitchen garden may properly be treated with such nicety that not only good vegetables, but something ornamental shall be attained by it. But here, where the pay is as much for one man's labor as that of five men's labor is worth in Germany, it is far better to cheapen the cost of vegetables, and pay for ornamental work where it is more needed.

So, too, with regard to every instance, where the more cheap and rapid working of an improved machine, or implement, may be substituted for manual labor. In several of the largest country seats on the Hudson, where there is so great an extent of walks and carriage road, that several men would be employed almost constantly in keeping them in order, they are all cleaned of weeds in a day by the aid of the horse hoe for gravel walks, described in the appendix to our Landscape Gardening. In all such cases as these, the proprietor not only gets rid of the trouble and care of employing a large number of workmen, but of the annoyance of paying more than their labor is fairly worth for the purpose in question.

There are many modes of economising in the expenditures of a country place, which time, and the ingenuity of our countrymen will suggest, with more experience. But there is one which has frequently occurred to us, and which is so obvious that we are surprised that no one has adopted it. We mean the substitution, in country places of tolerable size, of fine *sheep*, for the scythe, in keeping the lawn in order.

No one now thinks of considering his place in any way ornamental, who does not keep his lawn well mown,—not once or twice a year, for grass, but once or twice a month, for "velvet." This, to be sure, costs something; but, for general effect, the the beauty of a good lawn and trees is so much greater than that of mere flowers, that no one, who values them rightly, would even think of paying dearly for the latter, and neglecting the former.

Now, half a dozen or more *sheep*, of some breed serviceable and ornamental, might be kept on a place properly arranged, so as to do the work of two mowers, always keeping the lawn close and short, and not only without expense, but possibly with some profit. No grass surface, except a shorn lawn, is neater than one cropped by

sheep; and, for a certain kind of country residence, where the picturesque or pastoral, rather than the studiously elegant, is desired, sheep would heighten the interest and beauty of the scene.

In order to use sheep in this way, the place should be so arranged that the flower garden and shrubbery shall be distinct from the lawn. In many cases in England, a small portion, directly round the house, is enclosed with a wire fence, woven in a pretty pattern, (worth three or four shillings a yard.) This contains the flowers and shrubs, on the parlor side of the house, with a small portion of lawn dressed by the scythe. All the rest is fed by the sheep, which are folded regularly every night, to prevent accident from dogs. In this way, a beautiful lawn-like surface is maintained without the least annual outlay. We commend the practice for imitation in this country.

REMARKS ON PEARS FOR ORCHARD CULTURE.

BY WILLIAM REID, NEW-YORK.

William's Bonchretien, or Bartlett. Every one that has been planting pears, for the last ten or fifteen years, has planted this sort more or less; and so far as my own observations have extended, they will be as well off as if they had planted some of the newer kinds, which have been very highly recommended. But let us begin at the beginning, and examine all the good and bad properties of this variety; for I have great doubts whether we have, among all the new sorts, anything, on the whole, nearly so valuable, and ripening at the same time of the year.

In the first place, it is a fine grower; it is a hardy tree; and it comes into bearing early; all of which are valuable properties to an orchardist. It is also of a large, uniform size, and, *at the season of its ripening here*, say from the last week in August to end of September, I may safely say that the Bartlett, for a market fruit, has no superior. I do not hesitate also to say, that an orchard of a few acres of this sort, where pears do well, will be worth as much as the whole produce of many a nice farm; and pears, now, can as well be brought three to four hundred miles, as they could be, heretofore, a distance of fifty,—as railroads now intersect almost every section of country, and fruits arrive almost in the same condition as if they had been gathered fresh from the tree. But this is one of those pears that must be gathered a few days before they are fit for use; otherwise, if left on the tree until maturity, they will lose much of their good qualities, and be little better than some of our common fruits.

This pear succeeds best on the *pear stock*, at least, as far as my experience goes. I have several times tried it on the quince stock, but, as yet, have never been successful. It seems to grow tolerably well the first and second year, but afterwards stops, and has a very unhealthy appearance. However, this is one of the sorts that Mr. Rivers says grows well on the quince; and Mr. R. ought to be good authority. If there are any cultivators who have trees of some age of this sort, worked on quince, I should feel greatly obliged by hearing their opinion through the Horticulturist on this point. The growth of trees, when young, is erect;

the wood has generally a brown appearance, but, in some soils, will be of a light yellow; the leaves incline to fold together; buds, on the year old wood, very flat; good specimens of fruit will frequently measure five inches in length, and from three to four in breadth, and always have a fine yellow appearance, sometimes tinged on one side with red.

Duchess d'Angouleme. This well known variety, taking into consideration all its qualities for orchard planting, and for profit, probably has very few superiors, unless it be the Onondaga, a fruit which is similar in size, and ripens at nearly the same time. But the Onondaga is of late introduction; and when we take into consideration the high character given to all new fruits, when first brought into notice, planters on a large scale will require it to be more generally tested, before planting it so extensively as older sorts. I am aware, that with cultivators in some localities, the d'Angouleme is not always considered high flavored; but when we take into consideration its large size and fine bearing properties, I doubt whether we have anything as yet superior. To be sure, there are many smaller sized pears, that are undoubtedly of superior flavor; yet, as I have previously stated, this sort has many valuable properties. It is very often high flavored, almost always of large size, and keeps well after gathering; so that it may be sent to market a great distance. For profit, it also has its merits. One acre of ground planted with this sort, in the vicinity of New-York, will yield a better remuneration to the planter than perhaps any other sort that can be selected. I would also state that I have a tree of this variety, on pear stock, planted in 1828, which has been in bearing for the last fifteen years, and I believe has never failed in producing a good crop. Some seasons the pears have been high flavored; and again, when a large crop was left on the tree, they were not so good, but, at the same time, they would have brought a good price in market. I do not recollect anything very peculiar about the leaves or wood of this pear, as distinct from many other varieties. It is a remarkably fine, erect grower; the young wood, in some soils, will very often have a reddish brown appearance; the buds are also always very prominent, (that is, projecting out from the young shoots.) The size of this pear is about the same as the Bartlett; but it is often much larger, of an oblong shape, and very blunt at the stem, which is generally inserted in a cavity considerably sunken. This variety is particularly well adapted for growing on the quince stock. It ripens in October, and keeps sometimes until the latter part of November. [We cannot rate the d'Angouleme so high as an *orchard* pear. Ed.]

Louise Bonne de Jersey has been in cultivation for the last ten or twelve years, and, I believe, is generally allowed to be a pear of superior excellence. However, this variety has, I think, in this country, been chiefly fruited on quince stocks, to which it seems well adapted,—producing fine, fair specimens of fruit, and of high flavor. Whether it will do as well on the pear stock, for orchard planting, will probably require a few more years to determine. I know that almost every person considers this pear one of the best. It certainly is so, on the quince stock, on which, as I remarked, the greater part of the fruit has been produced; but I believe, as yet, it has not been produced, in any quantity, on the pear stock. It does not appear to me always safe to judge of the qualities of fruits, for orchard planting, when they first come into bearing. I think we have abundant

evidence to the contrary; for if we look back, and examine the periodicals and works on fruits for the last ten years, what do they say? That a great many fruits are of superior quality, new, and very fine indeed; in short, some works would have you believe they described hardly *one* which is not first rate. But how many of these first rate sorts, within the last five years, have lost all of their high character they had then? Now, one would supppose if they had been first rate then, they would be so at the present day. White Doyenné and Bartlett were of that stamp then; they are equally good now.

It will probably be safest to defer giving an opinion on Louise Bonne de Jersey, as regards its qualities for the orchard, *on pear stocks*, until further trial, unless some person, who has had it planted ten or fifteen years, can give a decided answer. As regards its growth, it may be classed among the free growers, both on the pear and quince stocks. Wood of a dark olive appearance; shoots erect; fruit of a long, pyramidal shape, about four inches long, and two to three inches across, of a pale green colour, and tinged on one side with dull red. It ripens in the month of October.

White Doyenne. This old and well known variety is familiar to every person who knows anything about pears; and every person allows that, when in perfection, it has no superior. It is still grown extensively by nurserymen here, and seems to grow with as much vigor as it ever did, although considered by some to be "*run out*;" though some physiologists, long ago, would have it that its time had come, and, like all living things, it must give up the ghost, and give place to sorts of later origin. It does appear to be the case that this variety, and several others, do not here give us fair specimens of fruit; but, as far as I am aware, the trees grow and flourish as well as they ever did; but the fruit of this variety about here, is certainly not as fair as it formerly was. This is not the case, however, to the north and west of New-York; for our markets bear abundant evidence to the contrary. As fine specimens come to the New-York market as ever did in former days; and the high prices, (four to six cents at retail each,) show the estimate still placed upon "Virgalieus" by the inhabitants of Gotham. There have been various reasons given to account for the cracking of this pear by many intelligent cultivators, but it seems to me without arriving at any very satisfactory results. I have always been of the opinion, that the cracking of the fruit is caused by a rust, or dark spots that get on the foliage in the early part of summer. The same discoloration spreads on the young fruit, and has the same effect as the mildew has on the gooseberry and grape. It is no doubt some kind of fungus or mildew that spreads over the tree. I have often observed, that wherever this black smut or rust gets on, the young pear ceases growing in that part; and as the skin grows hard, and does not expand with the rest of the pear, it either cracks open or causes an indentation on the fruit. Now, if we could find something to prevent this black smut or mildew on the foliage, I have no doubt but the Virgalieu pear would be just as good now, about New-York, as they ever were.* We have no variety, probably, more profitable than this sort, where it grows exempt from this fungus or rust. Both this variety and the *Gray Doyenné* succeed on the quince stock, and sometimes produce fine specimens, when they have entirely failed on the pear. This is a moderate grower in

* Wood ashes and bone dust will cure this rust, which is the outward symptom of a want of specific food in the soil. Ed.

the nursery rows. It forms its side branches very uniform, and almost horizontally, and forms a beautiful tree when grown as a dwarf, or for pyramidal training. Ripe from the middle of September to the latter part of November.

Washington is a seedling pear, of American origin, and of very high qualities; and had this been taken as a standard to judge by, there are many seedlings at the present day that would never have been figured, or brought into notice. The Washington pear, when in perfection, certainly has few superiors. It is beautiful and fair to look at; and it has a good, erect habit of growth, particularly on old trees. The wood has a light grey appearance, and the bark is very distinctly spotted with white dots. The fruit is of a size less than the White Doyenné, egg-shaped, of a fine yellow colour, with numerous gray russet spots. It is ripe, in the vicinity of New-York, about the last week in August. This sort does not succeed on the quince stock.

Surpasse Virgalieu. This pear somewhat resembles the White Doyenné in its habit of growth. The side branches on young trees are, however, rather more upright. This sort, as far as I have been able to judge, from specimens grown on young trees, is a fine fruit, and a good deal like the old Virgalieu, but rather more round, with some few blotches of faint red. It is not liable to crack, like the latter sort. There are no doubt some good sized trees of this variety now in bearing, in various parts of the country. Will any person be so kind as to make the habits of such trees known, through the columns of the Horticulturist? This sort grows well on quince stocks.

Fondante d'Automne. This is another variety of the pear that is highly spoken of by most cultivators, and, I believe, has generally proved excellent. It is a moderate grower, of rather an erect habit. The young wood, particularly on young trees, is of a yellow [?] appearance. The fruit is of moderate size, very melting, and good flavor. This pear succeeds well on the quince. Is there any person that has good sized trees of this variety, and will it be profitable for market?

Beurre Capiaumont is one of those pears whose fair appearance has recommended it as a profitable market fruit. So far as I have had a chance to judge of its qualities, I think it is one of those varieties than can be dispensed with. It is seldom or ever good to eat; and at the time it ripens, we have many other larger and far superior sorts. The wood is of a yellow colour; leaves pretty deeply serrated; fruit of ordinary size, tapering to a sharp point, and often with a bright red cheek. It grows on the quince stock.

Madeleine is considered one of our best pears, ripening in July. It is a good strong grower. When young, the branches grow very erect, and it can generally be recognised at once among other pears in the orchard, by its very straight, upright appearance. The wood of this sort is of a dark colour, with some few light gray specks. The size of the fruit is small. It keeps but a short time, and does not yet seem to be plenty in our markets. It grows well on the quince stock.

Early Catherine. There are few early pears, ripening in July, which yield a *better remuneration* to the planter than this sort will. The trees grow to a large size, with long, pendant branches; and when they come into bearing, they produce very large crops. The Early Catherine is well known in the New-York and Philadelphia markets. I have often eaten this pear, and

thought it one of the best early pears grown. It is said, however, by some, not to be quite as good to the north of New-York; but, until we can find something better, this is a variety that I would recommend to those who are fond of early pears, though, like most of the July pears, it keeps only a few days, and ought to be gathered from the tree to have it in perfection. The wood of this sort is very dark, with long branches. It is a good grower, both on the pear and quince stock. The fruit is of a long pyramidal shape, and has a long crooked, fleshy stem. Size rather below medium; colour brownish russet, occasionally with a dull red cheek.

Seckel. This well known pear, when grown on good thrifty trees, is always allowed to be of very superior quality. It has a peculiar flavor that very few pears possess. It seems, however, that the Seckel pear is not always as fine as it used to be. On old trees, especially, they are very often small and without flavor; and for some years, in particular localities, such trees are liable to drop their leaves early before the fruit is ripe, which, in consequence, is without flavor—[for the want of proper culture. Ed.] Yet, the Seckel is a pear that will always be cultivated in private collections; but it is very likely to be superseded by some of the larger sorts, when *profit* is the object of the planter. This variety, although slow of growth when young, is, when grown to a good size, a tree of great beauty and perfect symmetry, and can never be mistaken in the orchard, or confounded with any other. I have only had the Seckel worked a few years on the quince stock. It seems, so far, to do pretty well. Yours, very respectfully, Wm. Reid.

New-York, February, 1849.

ON THE CULTURE OF VINES IN POTS.

BY JAMES STEWART, WASHINGTON, D. C.

Sir—In your Horticulturist for September, there is an article on the culture of vines in pots, extracted from the London Gardeners' Chronicle, and written by Mr. Spencer, of Bowood Gardens. So far as the article treats on growing the plants, for producing fruit, it is excellent, and is the practice of all the noted grape-growers in England; but he does not *minutely* give the treatment they ought to receive, in some of the great essentials, to insure success.

The most important point, in the culture of vines in pots, is altogether overlooked, viz., *never use but one year old plants* for the purpose; and as soon as they have borne a crop, let them be thrown aside. This, with judicious stopping, is the *great secret* in vine culture in pots. By raising your plants from single eyes, every season, and growing them as he describes, success is certain; but it must be regarded as most essential never to employ only young plants for the purpose. Older plants, treated as he points out, will certainly bear; but there is no comparison between them and the young plants,—the latter far surpassing the former in quantity and quality. This is the practice of Mr. George Mills, gardener to the Baroness de Rothschild, Gunnersburg Park, near London; one of the best practical gardeners, and successful cultivators in England. Two years ago I was in England, and called on Mr. Geo. Mills, (*being an old pupil of his,—having served my time*

under him,) and was astonished at the early crop of grapes, in pots. This was on the 27th of February, 1847. In one house I saw, plunged in a bed of tan, four hundred plants, bearing from five to eight perfect bunches *each*, all ripened in the most perfect manner. Some of them had been already cut for the table These plants were introduced on the 25th of October, and subjected to a slight fire heat on the 1st of November, and then treated as is the usual practice of all good cultivators,—never allowing the hygrometer to ascend above 78; for if this amount of moisture is not maintained, you will be subjected to all such evils as red spider, thrips, mildew, &c., with their attendant consequences. Even when open, warm water gutters are used, in conjunction with flues, that are not more than three inches in diameter. You cannot saturate the flues, walks, &c., too much, particularly in the night, and in bright sunny weather,—bearing in mind to regulate the day temperature, as to moisture, &c., according to the weather, by covering the gutters, in cloudy, damp weather, and the contrary in clear sunny days.

During my stay in London, I called on all the principal places where early forcing is carried on, viz., at the Duke of Northumberland's; Mr. Carton, gardener, Sion House, Isleworth; Marquis of Ailsa, St. Margarets, do.; Mr. Wilmot, the great grower for Covent Garden market, do.; Mr. Thompson, do., Great Ealing; Mr. Breffitt, of Barnes; Mr. Stone, Deptford; Mr. Geo. Dodds, gardener to Sir Geo. Warrender; Royal Gardens, Trogmore, under the superintendence of Mr. Ingram; Mr. Gibson, gardener to the queen dowager, Bushy Park; Mr. Mallison, gardener to the king of the Belgians, Claremont; and a great many other places of the first note, in the vicinity of the great metropolis. Although I saw some excellent crops of early grapes in pots, yet none could *compare* with the Gunnersburg Park crop of grapes.

If you should deem the following remarks worthy of perusal, you are at liberty to publish them. By observing the annexed routine, the cultivator will be amply rewarded by the generous vine.

Raising the Plants.—Choose the most prominent eyes; be careful that the wood is well ripened; cut them into eyes of about one and a half inch in length; insert them singly in pots four inches in diameter, and plunge them into a hot-bed. When the pot is full of roots, shift them into the fruiting pots; these should be from sixteen to eighteen inches diameter, or boxes of the same dimensions. Care must be taken to keep them as near the glass as circumstances will admit of. Train them up till they reach the height of three feet, then top them where the terminal bud breaks; let it grow two feet and top it again. Be particular when the terminal eye is again excited, not to stop it *closer* than within two or three eyes of the former place. This will now give a sufficient length of rod (or stalk) to produce twelve or fourteen bunches of fruit; select the best, and only retain six, which is much better than a greater quantity. If it is stopped back to one eye above the former stopping, you will be sure to excite the main eyes which are to produce the crop of fruit, and which would render the plant useless. Be careful to keep them free from all *laterals;* and a judicious management of stopping-in their growth is indispensably necessary, to insure prolific vines. Water with pure, soft rain water, if obtainable; and if well water has to be used, add one ounce of *nitrate of soda* to three gallons of water, and let it stand in the house till it attains the vinery

temperature. Guano, twice a week, should be also used,—a handful to a large water pot of about three or four gallons.

About the 10th of September, let them be removed to a north aspect, plunging them in tan or rotten leaves up to the rim of the pot. Let them remain here till the middle of October, when they should be pruned six inches lower than the second topping. Keep the pots as dry as possible, so as to superinduce *a dormant state.*

There they should remain till the first of November, and then be introduced into the house, if it is desired to have a ripe crop by the middle of February. If not required so soon, great care must be taken not to let the roots get frozen in winter; as in that case, failure is *inevitable.* They can be stored away in a cellar, stoke hole, or any other place free from frost; and if there should be no convenience of this kind, they might be covered over with dry leaves, to the depth of two feet and a half.

Vines that are intended to start early, will break much more regularly, and much stronger, if they are kept in the dark a short time previous to their being excited. When removed to the house, they should receive a good soaking of water, and a top-dressing of the soil recommended, with the addition of a fourth of dissolved bones, incorporated with it.

It must never be forgotten that the plants, during their whole growth, should enjoy as close a proximity to the glass as circumstances will permit.

Description of a House, most suitable for vines in pots, particularly in regard to *ripening the fruit in February and March:* Small, low, sheltered houses, having an angle of not let less than 55 degrees, are the best to employ for the purpose of growing early grapes, so as to have them ripe in February and March. A "*lesser angle*" than this would not do; as the sun would not strike the house perpendicularly till later in the season, and the consequence would be, a great deficiency in flavor of the fruit. The size of the house must be determined according to the supply required; and persons could have them any length and width, to suit themselves, providing that they *adhere to the angle of 55 degrees,* as it is highly important to secure as much *sun light* as possible between the autumnal and vernal equinoxes. If the situation will admit of the ground being excavated to the depth of two or three feet, so much the better. Shutters should be provided for covering the house, in very severe weather.

Mode of Heating.—The best system of heating, to my mind, is a combination of *hot water,* in open gutters, the *flue,* and a circulation of atmospheric air, as on the so called *Polmaise system,* but which, in fact, was introduced into practice at Isleworth, at the Marquis of Ailsa's, in 1838, by Wm. Penn, horticultural builder, of Lewisham, Kent,—with only the difference, instead of a furnace or stove, hot-water pipes were substituted; still, the *principle* was the same. A good substantial brick flue should run parallel with the back wall, and about two feet distance from it, where the fire enters; and over the fire should be placed a small copper boiler, having a perfectly flat bottom. Open gutters should communicate with the boiler, for the water to circulate in; and they may run parallel with the flue, or rest on the top of it. Gutters of tin, (*well painted with red paint,*) or of copper, or iron, will answer well; they should be provided with covers, which should fit accurately, to confine all moisture, if not required. The whole now should be enclosed in an air chamber, having small sills let in, at the distance of four feet apart. They should be two feet square, and provided with shut-

ters, to be hung on hinges, so as to have ingress to cover or uncover the gutters, when required. At the end of the air chamber should be an opening, for the escape of the heated air. The top of the chamber may be covered with boards, and on it sufficient rotten leaves, or tan, to plunge the pots in. The height of the air chamber must be so regulated as to have a space of two feet and a half left between the glass and the top of the pots. A walk should go down the centre of the house; and if sunk twelve or fourteen inches, it will act as an air drain, to conduct the co'd air over the fire, where it enters a small drain, projecting two feet into the walk, and communicating with the bottom of air chamber, where the fire enters, will give satisfaction; although it will act very well, if there is an opening twelve inches wide, left to communicate with the chamber, when the walk is upon a *perfect level* with bottom of the air chamber. There should be a drain communicating with the bottom of the air chamber and the external air, which should be provided with a slide, so as to supply fresh atmospheric air when required. This apparatus, for economy of fuel, simplicity, and efficiency, has no rival; as it also supplies a steady, safe, and mild bottom heat, by the same machinery as is required to heat the air of the interior of the house. To be complete, a cistern should run the whole length of the house, and be placed *inside*, and extend from the front wall to the walk, and three feet deep, at least. It may be built of brick, and cemented, or of lumber, and lined with zinc. No house should be without a good cistern, to be supplied from the roof, and of sufficient capacity to be adequate to the consumption of the house in the greatest drouth.

Training.—The vines are to be trained down the rafters, twelve inches from the glass. Each sash will accommodate two. By training them downwards, they will develope every bud, and break regularly down to the bottom of the pot; whereas, if trained up the rafter, in the usual way, they would break too vigorously at the terminal bud, which would rob the other eyes of a due supply of sap; consequently, they would remain inert, which would curtail the crop in a serious measure.

Soil.—The soil that is best adapted to vine culture in pots, is a good hazel loam, not too stiff in texture, with plenty of turfy fibre in it, and a fourth of good decayed "*bog earth*," which has been frequently turned, and exposed to the action of a winter's frost. This bog earth abounds with the richest decomposed vegetable matter, and is found in most swamps. One pint of fine salt should be added to each bushel of soil, and the whole thoroughly incorporated together. In this soil they attain a degree of luxuriance seldom witnessed.

Water.—Use pure, soft rain water, *if possible;* and if "*well*" water, mix nitrate of soda, as before directed, and guano twice a week.

Temperature.—Supposing the vines to be introduced on the first of November, the house should be kept very moist and "close," if the thermometer does not range higher than 60° Fahrenheit, in the day,—allowing it to sink to 40° at night. This treatment may be pursued for the first two weeks, then gradually increase the temperature with a corresponding amount of moisture, till it reaches 65° at night, and 75° in the day, till the first week in December. The shoots will now be six or seven inches in length, and the bunches well developed. Select six of the best, and disbud all the others; pinch off the shoots one joint beyond the bunch, *and keep them closely stopped;* increase the temperature

by day to 80°, and with bright sunshine, it may run up to 100° or 105°, with plenty of moisture,—allowing the night temperature to sink to 70°. When the vines come into bloom, keep up a high moist temperature, 95° in the day, with sun 100° to 105°. At this *critical time*, the night temperature may be increased 80° 82°. The grapes safely set, and when as large as mustard seed, thin out the berries; and to a practiced eye it can be done to a nicety, although many err in not taking a sufficient quantity out of the bunch. The day temperature may now be kept permanently at 85° to 90°; and with sun, it may rise to 100° 105°, with *plenty of moisture*,—allowing the night temperature to be fixed at the minimum of 75°. Always keep the vines closely stopped, and never use water to water them with, but such as is of the same temperature of the house. Never admit air through the sashes; let it come through the air chamber, and be thoroughly warmed before it enters the house.

With strict attention to these directions, the grapes will begin to colour in the first week in February; and the moment you perceive this, *withhold water from the pots*, unless absolutely necessary, and keep the gutters closed, and maintain a "*dry atmosphere.*" It will insure you colour and flavor in the highest degree; not to forget, now to admit as much fresh air as you possibly can. From the time that the grapes are set, and swelling off, a large quantity of moisture is absolutely necessary. The leaves should present, every morning, small globules of water hanging on them,—the very picture of health, and proof of good management. Any one disposed to follow the above rules, will not be disappointed in obtaining good grapes from vines in pots,—always keeping in view two *prime essentials* in vine culture, viz., a large supply of atmospheric moisture, and a fall of night temperature. Where a deviation from these rules is made, a miserable, small, badly coloured, and worse flavored fruit is the result.

This article, if it cannot boast of being written in a style like that of some of your correspondents, with a great many flourishes, is at least a *practical article*, and is the practice which has been very successful, for the last fifteen years, with Mr. Mills, at Gunnersburg Park. I have also had the same success myself, as a reference to the Transactions of the Norfolk and Norwich, and Cambridgshire Horticultural Societies will attest; the two first provincial societies, of the kind, in England.

And last, but not least, I have also been successful at the London Horticultural Society, when in competition with the *renowned* Roberts, then gardener to Matthew Wilson, Esq., Eshton Hall, near Skipton, Yorkshire, and now of Raby Castle, one of the best, if not the very best grape-grower in England. By referring to the 4th vol. of the Gardeners' Chronicle, Professor Lindley's remarks will be seen. Perhaps it may be asked why I do not practice this system here? My answer is this; fortune has never favored me with a chance of so doing. The account given in Paxton's Horticultural Register, by Mr. I. Dougal, of the success of Mr. Mearns, of Welbeck, of Mr. Stafford and others, of vine-growing in pots, must be received with due caution; as I can unhesitatingly state, on my own personal knowledge, that no such wonderful results, as those chronicled, were ever attained. As I lived under Mr. Mearns, at Welbeck, when he was introducing the coiling system into notice, I have a right to know, that too high a colouring has been given to its merits. When I lived with Mr. Moffat, gardener

to the Duke of Newcastle, at Clumber Park, as foreman of the forcing department, I used to visit Welbeck, Willersley, Chatsworth, Shobdon Court, and other places, where vine culture in pots was carried on systematically, and can assure Mr. Dougal that, although that mode is successful in a high degree, yet amateurs, and practical gardeners, have been led to expect too much from it, particularly as detailed in Mearn's Treatise on Vines in Pots. The system of Mr. Patrick Flannigan, late gardener to Sir T. Hare, Stow Hall, Norfolk, for the production of early grapes, I should decidedly recommend, in preference to Pot Culture. When houses are established on his plan, they have the merit of answering, equally well, as the pot system; and being permanent, vineries now exist at the above mentioned place which were planted 30 years since by the late P. Flannigan, and are still producing *splendid crops* of fruit, and ripening them in March. In the eastern counties of England, this plan is universally followed, particularly at the Bracondale horticultural establishment of Mr. Bell, the most extensive grape cultivator in Great Britain, where tons of the finest fruit is produced, and a supply all the year is kept up.

Should this meet with your approval, I may, at some other time, give an outline of the above method; but perhaps something like it may be detailed in Mr. Allen's treatise, that you have noticed, which I have not had the pleasure of seeing.

The following varieties I am inclined to recommend, as most suitable for pot culture, after having tested all the varieties extant, with the exception of what may have made their appearance in the last four years, viz: *Chasselas Precoce*, *Royal Muscadine*, *Black Hamburgh*, *Black Damascus*, (true,) *Black Prince*, "*Clay Hall Seedling*," (half the berry white, half black,—this is a superb grape;) *New Dutch Sweet Water*, *Cambridge Botanic Garden*, and *Grove End Sweet Water*. The Frontignans—Black, White, and Grizzly, do very well. Last, but not least, let me say a word of the "*Cochin China*." This grape was introduced into England by Sir Ousely Gore, Bar't, British ambassador to the Persian court at Ispahan, by whom it was sent to the Earl of Egremont, at Petworth House, in Sussex. Two years ago, it was only grown at Petworth, Lord Wharncliffe's, Wortley Hall, Yorkshire, and at Stradsett Park, the seat of Wm. Bagge, Esq., M. P., Norfolk. It was not in the possession of any one else, not even in that of the London Horticultural Society, in whose Catalogue the Cochin China is described as a black grape; whereas, this is a white one, and, when fully ripe, it assumes a beautiful amber colour. It has a long bunch, well shouldered up; the berry is of a long oval shape; the flavor is of first quality. The Cochin China, in short, is one of the earliest grapes known, and as prolific and hardy as a Black Hamburgh, if not more so. It sets well, in a very low temperature, where the Black Hamburgh will not; and when it comes to be known, it will become as universal a favorite as the Black Hamburgh now is. This new variety is now in the hands of Mr. John Smith, nurseryman, 5th and Buttonwood-street, Philadelphia, and one of the best "practical demonstrators" of vine culture in the United States; as was exemplified by him, when gardener to the late Nicholas Biddle, Esq., Andalusia, Bucks county, Pa. Mr. S. will have it in bearing year after next, *permanently*. Last year he fruited a plant in a pot, to test it, and was so well satisfied of its superiority, that he inarched it on a fine vine of the Zinfindal variety. This plant stood in

a house, occupied by roses, where no fire heat was applied, and ripened its fruit by the 2d of July. Mr. Smith will not offer plants for sale until the vine inarched comes into bearing; then purchasers can have occular demonstration as to its merits. The above vine that he has possession of, I know to be *genuine*, having introduced it myself from Stradsett Park, in the spring of 1847. As I conducted the gardens at Stradsett Park for six years, previous to my coming to this country, I can confidently speak of its good qualities; and my (then) employer, Wm. Bagge, Esq., M. P., who is a first rate judge of good fruit, used to say that it ranked next to the *Muscat of Alexandria*, and was the second grape in cultivation. Mr. Joseph Harrison sent a plant of this variety to Stradsett, from Petworth, in 1839, being one of the first plants propagated from the original.

Having extended this article to a much greater length than I intended, I must crave your indulgence for encroaching so much upon your valuable pages. In conclusion, I would recommend not another variety to be added for pot culture; and to have the very best, I would repeat, use *Black Hamburgh*, *Black Prince*, *Chasselas Precoce*, (true;) and, when obtainable, *Cochin China*, and *Clay Hall Seedling*.

The first opportunity I have, I will give you a description of the *Clay Hall Seedling* grape, and how it originated. And now, hoping to see vine culture advance rapidly, both in and out of doors, I remain, sir, yours truly, James Stewart.

Washington, D. C., Feb. 14, 1849.

PRODUCTIVE FAMILY GARDENING.

[FROM THE LONDON HORT. MAGAZINE.]

The great secret of getting rich is to make the most of what we have; and whether this applies to money, to time, or to land, it is the same. You may almost tell what a man is by the appearance of his garden. Does he make the most of his ground? then there is some hope he is prudent. Does he make the most of his labor? he will rarely want. We do not mean that such men are never unfortunate, that they have not their troubles and trials like other men; but under every kind of visitation such men are better prepared, and therefore suffer less than careless reckless persons. In a garden no rod of ground should be ever idle. If a man who is naturally lazy has not kept his ground well cropped, he may have his excuses about laying fallow, ridging it in winter to mellow the soil, or leaving it rough that the frost may get into it; but there is no occasion for all this,—the soil need on no occasion to be at rest; change of work is a holiday to man, and change of crop is all that any ground needs; for no two crops require the same kind of feeding, and consequently, by changing from one which requires high feeding of one kind to another that requires no feeding, or feeding of another sort, the ground continues at work without being exhausted. If ground has been used for carrots, parsnips, or beet-root, it may be immediately cropped with lettuces, or some crop which has no tap roots. Turnips, also, and potatoes, may be followed by peas. Very little attention (if that be properly devoted) will be necessary to prevent ground being wasted, or crops being out of place. When a garden is wanted for a family, and economy rather than variety is to be consulted, we are quite sure that asparagus, sea-kale, and similar expensive things, ought not to be undertaken. The first object is plenty, the second object is the choice of those subjects which last on the ground, or preserve well when taken off. Potatoes are a first consideration, onions, carrots, parsnips, and beet-root, are next, and Jerusalem arti-

chokes are not to be forgotten, because all these are capable of being stored for months after they are taken up; then, of those which last a long time on the ground, and afford a constant supply, scarlet beans, cabbages, onions, winter spinach, and savoys, are the most worthy of a cottager's attention; and brocoli (except the sprouting, which is a hardy useful vegetable,) cauliflowers, peas, and other subjects, which yield less produce on the same ground, by reason of the greater quantity of room they take, or the longer period of remaining on the ground, must be considered as luxuries. Everybody, with a garden, must consider the circumstances under which he has to cultivate it. If he has more ground than his family require for their supply, care must be taken to have the surplus of a useful and marketable nature, such as are always saleable, and if not bought on the ground, capable of being preserved for some time. All the articles mentioned in the first instance are of this nature. Potatoes, carrots, parsnips, beet-root, onions, and such like subjects, when ripened, will keep, and are always in request; whereas, to over-grow any perishable crop is unwise, because they will bring nothing, as when one person is overdone, most people are in the same predicament. There are some seasons in which it is better to sow for main crops, but in a general way it is better to have different sowings, and not too large, because all will frequently come in together, and so in a few days all be gone by. How frequently do we see a whole planting of cauliflowers come in and go by in a single week; they are unlike cabbages in this respect; for a cabbage is eatable from the time it has four good leaves until it is hard and solid; hence, cabbage is the most useful of the green crops, and should be sown at all seasons, that there may be always some ready to plant out. Savoys are perhaps the most hardy of the good winter greens. Scotch kale may be an exception, for hardly any degree of frost will kill it. Brussels sprouts are an excellent green; but when the object is economy of ground, it is better to limit the crops to those which are most serviceable as food, or most saleable as a surplus. As a general rule, where ground is an object, double culture is desirable, that is, the planting of one crop between the rows of another crop; sowing rows of spinach or peas, or planting rows of French beans, or lettuces or leeks, beet-root or parsnips, between rows of other subjects. The only good object to be attained by this is the saving, perhaps, of a month or something more occasionally by digging between the rows of a crop that may be not cleared off for a month or six weeks, and planting young stuff that will not be in its way till that time arrives, although it will be getting on pretty nearly as fast as if there was nothing there. When the other crop comes off, the digging of the ground on which they stood will let air into the soil, and greatly refresh the rising crop, whatever it may be. Another mode of economising the ground is to plant out some subjects at half distances. Cabbages, in the fall of the year, are adapted for this. If, for instance, they would cabbage well at two feet apart from row to row, and eighteen inches from plant to plant, put them in rows only one foot apart, and only nine inches from each other in the row: all through the winter, you may be pulling the alternate rows for greens and cabbage plants, and when you have removed the alternate rows you may begin to pull up the alternate plants; meanwhile the plants intended to cabbage have lost nothing, because before they are too thick those that are removed give ample room to the remainder to cabbage. Another mode of economising, is to sow radishes, spring onions, lettuces, &c., in the same quarters as the early potatoes, and they are cleared off for consumption or for planting out before the potatoes are inconvenienced, or grow enough to injure the other crops. Experience will always teach us the best mode of economising ground and labor; but some few general hints may be useful to the amateur and the cottager. There are many books in which there are directions for the garden operations every month in the year, but even the best of them are not explicit enough in respect to the quantities or proportions of ground to be sown or planted; but so much depends on the circumstances under which a garden is cultivated, the wants of the cultivator, and his command of labor, that

we hardly know how it could be defined, unless we take an ordinary garden required for an ordinary supply. There are not, however, two families alike in this particular: one family may not consume a peck of onions in a year, while another, no larger, may eat several bushels; under these circumstances (like the little work called *Gardening for the Million*,) we recommend frequent sowing rather than large crops, and lay it down as a rule that the wants must regulate the supply. Productive gardening, therefore, may mean large produce, abundance of everything; but the intended application of the term is large produce *without waste*, and the way to secure this is to limit the quantity of perishable articles, and make all the abundance and surplus of some crop which is always saleable and not perishable,—that is, not perishable within the period of several weeks. We propose to direct briefly the cultivation of the various subjects desirable to a family, so as to make the most of the ground.

POTATOES.

The numerous writers on the cultivation of the potato differ as much in their plans as if they were advising upon as many different subjects. We have grown them upon every plan. The indifference of the root to many different modes of treatment, and its success occasionally under all, has made all men too careless. We set out with preferring whole tubers for sets, in preference to cut sets, when they can be got of the right size, and, when we can get whole sets, we like autumn planting better than spring. Whole sets should, on account of economy, be small, that is, about the size of a walnut in its green husk; those much smaller might prove weak, if much larger there would be waste. Whole tubers are less liable than cut ones to be damaged by wet or frost, but for winter planting, or rather for autumn planting, they should be a clear six inches under the surface, for which purpose the dibble must be thrust down eight inches. In selecting the place for potatoes, plant those intended to be early under a south wall or paling, or on a sloping southern aspect, using the Ash-leaf kidney, Soden's early Oxford, Rilot's flour-ball, Alliway's early seedling, and Looker's Oxonian, or any other of the well-known early kinds. Plant any of these a foot apart, in rows eighteen inches from each other. Plant in October. Between these rows there may be planted rows of cabbage plants, not more than six inches apart, to be pulled as greens as soon as they are large enough to eat, beginning by taking every other one the first time you go over them, and clearing them altogether the second time. When the potato plants are well up, let them be earthed, that is, the earth drawn up round their stems with a hoe; but although we mention October, the open weather from that time till May would be good, if the vegetation could be kept back; for the instant a potato begins to shoot the eyes, it begins to take harm. Common sense dictates that the instant the eyes begin to swell the tuber ought to be in the ground; for this reason, seed potatoes ought never to be pitted, but when taken up they should be dried on the surface of the ground, or what is called greened. This process thickens the skin, evaporates a portion of the moisture, and adapts them for keeping, though it totally spoils them for eating. They ought then to be kept in a dry, cool place until the period for planting arrives. Suppose them disinclined to grow, and the eyes not to start even till late in the spring, they would be just as well planted the last day as the first; but we repeat that the instant they begin to grow (before planting,) they begin to lose quality. Presuming large potatoes alone can be had for seed, the necessity of cutting them into smaller sets must be admitted; but equal care, indeed greater rather than less care, must be taken to cut and plant before they begin to grow. In a general way it may be observed that a potato has the eyes for growing chiefly on one half. Now if the potatoes to be cut are in good order, and not growing, one-half may be cut off for eating, the other, containing the eyes should be so cut as to have one strong eye on each shoot; some are more liberal, and have two, and in some kinds of potatoes the eyes sit so close that you are obliged to have more. These cuts should be spread out to dry before they are planted; a little lime sifted over them, so as to dust them all, is desirable.

The planting may be entirely regulated by the disposition to grow. It may be sufficient to say here that when a potato is in the ground it is gaining strength as it grows, but while it is out of the ground it is losing. It may also be observed that potato planting is good so long as potato sets that have not begun to grow can be procured. The various modes of planting depends on the quantity of ground, the rate of labor, and the quality of the soil. The following practices are common in different localities:

1. Trenches one spit deep are dug, and the soil thrown on one side; the trenches are half filled with stable dung, the sets placed on the dung, and the soil placed on the top, forming a complete ridge, under which the potatoes soon vegetate and often yield heavy crops; but in general the best potatoes for eating are those grown on undunged land, which does not yield so much.

2. Dung is placed on the land and dug in, and the sets are dibbled in from four to six inches below the surface; in this case the soil should always be pressed on the tuber, that it may lie solid on the ground, for if this be carelessly attempted, one half the sets, being dropped into a hole that a lump of soil may stop up half way, would be left without any soil surrounding them: this cannot but be injurious, therefore we cannot be too particular in seeing that the soil above is bruised and lightly pressed, so as to surround the set.

3. Where there is much land, furrows are ploughed, the potatoes dropped into them, and ploughing the next furrow covers them up. In this case, the second furrow is not used, as it would be too near for the rows, but the third furrow fills the second, and is used for the sets, the fourth covers them in, and so on, the whole ground being thus well stirred. If such land is to be dunged, the dressing is spread over the surface and ploughed in.

4. After digging and, if necessary, dressing the ground, the sets are laid in rows of the proper distance, and earth is taken from between the rows and thrown on the sets.

A crop of very early potatoes may be had, by digging the ground along the foot of a south wall, placing the sets a foot apart, and about six inches from it, and then take earth from the front and throw on them so as to form a sloping bank, and when the plants come up, earth them up on the outside. This may be a small crop, because it is generally dry, but it comes early in proportion, and always of fine flavor. The late potatoes ought not to be planted late, that is, the sets must not have grown out before planting, and the distance for the late ones ought to be two feet, and the very large ones two feet six from row to row. Potatoes are ripe when the haulm decays. Regent's, Forty-fold, York red, Ne plus ultra kidney, Champion, Red kidney, are good sorts for main crops.

CARROTS, PARSNIPS, AND BEET-ROOT.

Next to potatoes, which are food for months, these three vegetables are the most useful. They are not only good with almost every kind of meat, but they are always saleable in any quantity; all grounds are not suitable, for they require fifteen inches of good rich light soil, free from gravel and stones. The soil should be trenched and well broken; beds of four feet wide, with one foot alleys between them, are the most handy for all three, and the seed should be very thinly sown over them; when the plants are up, they should be hoed to leave them eight or nine inches apart, nor should a single weed be allowed to grow. The first hoeing may not do this effectually, but the second, with the help of the hand occasionally, will accomplish it. These crops are valuable in all families, and, besides using them as soon as they are large enough, they may be stored as soon as they are ripe, and, with care, keep through the winter. The early carrots to be drawn and eaten as soon as they are of sufficient size, should be sown in February and March, the main crop the latter end of April; the best for the former is the Early horn and its varieties; the best for the late is the Altringham. For storing they ought not to be taken up until the foliage turns yellow.

ONIONS.

This is one of the most useful of vegetables, and deserves especial attention; like the previously mentioned crops, they keep a long while if well ripened, and the principal art in their culture is to well dress

the ground; well decomposed night soil, a good two inch thickness all over the soil, forked into and well mixed with the top six inches of mould, will be found an excellent dressing; but it must be well decomposed, or it will be too strong. The surface should be well levelled, the lumps well bruised, and the seeds sown thinly and equally over the bed; this should be rolled in or trodden in solid, and raked smooth and even. The beds, like those of all crops sown broad-cast, ought to be four feet wide, with alleys of one foot. The month for sowing for a main crop is March, quite the beginning; when they are up they should be hoed out, so as to leave them six inches apart, and in a week or two a second hoeing will be found necessary; as the onions grow there may be found some close to each other—two in a place instead of one. These should be drawn by hand, so as to leave only one, and they must be kept clear of weeds all through their growth. When the period for taking up approaches, and the bulbs have swelled nearly as much as they will, the market gardeners make a practice of breaking down the foliage, under an impression that to keep on growing would exhaust the onion, and that stopping the growth of the leaves by breaking the necks throws all the strength into the bulb; we venture to affirm that this is a mistake, the breaking down of the leaves can be of no service; they, like all other plants, receive one kind of nourishment from their foliage, another from the root, and unless all goes on harmoniously, things cannot be at their best. However, when the foliage begins to turn yellow the bulbs are ripe, and may be lifted and left on the surface of the ground to dry out some of their moisture; they should be preserved in a cool dry airy place. The sowing of earlier crops and later ones for present use may always be done where something else is growing, such as between lettuces that are planted out, or any warm border or corner, or in frames; they do not come under our definition of productive garden, but rather among the luxuries than otherwise. The sorts best adapted are the Deptford, white Spanish, Tripoli, and Portugal; all these keep well and grow to a useful size.

JERUSALEM ARTICHOKES.

The value of this root was, perhaps, hardly known by a large portion of the public until the scarcity of the potato rendered all vegetables available; as a substitute it is very poor, but as a vegetable capable of being dressed many ways, and requiring very different treatment in cooking from the potato, it is worth a place, because it is preserved as easily as any vegetable in store all the winter, and can be made available. It is chiefly used in stews, alone or with other vegetables. The culture is very easy; the haulm grows six feet high, therefore requires room and support. The best place is along the back of a border, or next to north or east palings and hedges. One row is found prolific, but as the uncouthness of this crop is against it, most people who cultivate it only have a large patch in the worst part of the garden, so that neither sun nor air can get to the roots. They are mostly left for years, the tubers becoming numerous and small. If there is to be a second row, there ought not to be less than a yard between the rows; plant them like potatoes, and dig up the crop annually; and keep it clean; take out every tuber, and, at the proper time, plant them again.

TURNIPS.

This is one of those useful vegetables that can be enjoyed with almost everything. In field culture it is precarious, but in garden quantities it is very manageable. They may be sown every month from February to September, and for families using quantities it is better to sow every month. They should be sown broad-cast in four feet wide beds, and as they get four rough leaves they should be hoed out six inches apart, and be cleared of weeds. They may require several hoeings, and a succession of crops for those who consume many will be desirable, but regard should be had to the probable supply of other vegetables when these are likely to come in for eating, and this, with the quantity likely to be wanted, must always guide these comparatively perishable crops; for turnips are not so well stored as carrots, parsnips, or beet-root; but no vegetable can be more wholesome than the turnip, and so that they be not oversown they are really good. The new

early stone, the Dutch, and the Maltese yellow, are the best for culinary purposes. The best month for sowing a principal crop is June, but if showery weather come in July, that is a good month.

CABBAGES.

Of all the green crops this is the most valuable; it may be sown and planted out, if the weather be open, every month in the year; it stands almost any frost. It is eatable from the time it is large enough to handle until it has acquired a hard close heart. It is a crop to put on every bit of otherwise idle ground; it can be planted between rows of anything and everything, either to be eaten as greens when large enough, or left to cabbage on the coming off of other crops. They should be sown thickish on a seed-bed in January, and every week there should be a lot put out, three inches apart, to strengthen for planting out. The sowings should be repeated every month till August, for a constant succession of plants is everything. There need not, however, be large quantities sown each time; the quantity must be regulated by the wants. Nor is the use of this excellent vegetable over when the full grown cabbage is cut, for the sprouts which follow are equally good. Planted out to cabbage, they should be eighteen inches apart in the rows, and the rows two feet asunder. When the best part of the cabbage is cut, other crops may be planted between the rows, the ground being first dug, and the stumps may be all taken up and be planted close together in some otherwise useless spot and yield a mass of greens when scarcely anything else is to be had. The seed is but little object; sowing, therefore, to provide at all times plants to put out is a necessary precaution. The best sorts are new Early nonsuch, Wheeler's imperial, Sprotsborough, Nonpareil, and Early York; the Battersea is not to be despised, though it grows a large size and wants plenty of room.

SCOTCH KALE, BRUSSELS SPROUTS, SAVOYS.

These are only so many different members of the same family, and may or may not be used. The savoy is the most useful, the Scotch kale the most hardy, but it is an inferior green to either a good savoy or cabbage. The savoy should be sown in April for a general crop, and the Brussels sprout and kale at the same time. These may, when large enough, be planted, or rather pricked out, three inches apart, to strengthen previous to planting out in their final place. In doing this the strongest plants must be taken, and every few days, as others get large enough, they may be pricked out, so that the store-beds may have a succession of plants constantly coming in, large enough to plant out as they are wanted. They may be always planted out as other crops are cleared, when the ground is not required for a different purpose.

RED CABBAGE.

Few people know the worth of this, except for its use as a pickle, but a moment's consideration will convince any thinking person that the immense number brought to market can never be consumed for that alone. It is used raw as a salad, and is excellent. When grown well, too, and cut at the right time, the red cabbage will store the best part of the winter, merely losing two or three of the outer leaves. As a salad it is economical and capable of being eaten by itself, and only requires to be cut into the thinnest possible shreds. The seed of the red cabbage may be sown in August, so as to get strong enough to stand the winter in the store-beds, where they are to be pricked out six inches apart. They may be planted out in February or March to their final destination, two feet apart one way and eighteen inches the other; spinach may be sown in drills between the rows, and will come off before the cabbages get large enough to occupy the room themselves. Seed may also be sown in small quantities in January in a frame or among the radishes, to be protected with litter from frost, and they will succeed from sowings any time during the period from January to August. When they have established themselves after final planting out and begun to grow, the earth should be drawn up to their stems, and they may remain in the ground until they are hard and solid, for in that state they will keep for months.

SCARLET BEAN.

This is the poor man's luxury; for besides growing up against palings, or in almost any corner of the garden, or as a

blind, and the plant from its peculiarity forming a good fence or hedge to separate any two departments of the garden, it is very prolific, and can hardly be said to leave off growing and bearing until the frost cuts it off. Again, the beans are allowed to grow to a size that renders the yield considerable, and the larger they are, the better they eat, until they get old and stringy. The seed should be sown in April, and the following are the different modes of planting them:—three in a patch, at a distance of three feet from patch to patch, or singly in rows a foot apart. In the first, poles or strong branches are driven into the ground at each patch; in the other they may be trained up bean sticks, placed along the row, or poles may be placed eight or ten feet apart and a line fastened along the tops, from which single lines may be led to each individual bean, or if against a north wall or paling, nails may be driven along the top, from which strings may be fastened in lengths to each plant. When they begin to bear, they should be frequently looked over, and all that are large enough, be picked for use, because they grow rapidly, and so long as they will break short in two pieces without being stringy, they are eatable. If a succession is desirable, sow again in May, June and July. Another, and if the ground be limited, a more advantageous way of growing them, is to sow the seed in a patch, in two or three barrows of dung for the sake of slight bottom heat, putting about six inches of mould for them to grow in, and when, about the middle of May, the weather looks settled, plant them out carefully without losing any of the fibres, and place the sticks, or poles, or string to them as soon as they are out.

HARICOT BEAN.

As a winter store, a few rows of the large white kidney or haricot bean may be sown at the end of April, and allowed to go to seed altogether, the entire crop to be used for stewing in winter. They require rich ground, that is to say, soil which has some heart in it; but after earthing up they require little or no care till they are fit to gather in. [The Tampico, or "Turtle Soup bean," is one of the most valuable of all bush beans, yielding an abundant crop; excellent, either as string beans or for soup. Ed. Hort.]

CELERY.

Although not always the most economical way of disposing of ground, if celery be grown in the ordinary way, a piece should always be spared for a supply for soups; celery for this purpose may be sown in a warm border in February, and as soon as it is large enough to prick out, it should be put two or three inches apart, only in a bit of good rich soil, to grow into strength. When it has advanced so as to stand the removal well, it may be planted in the common surface in rows three feet apart, so that any crop that comes off pretty early may be planted between. As the celery advances in growth, draw the earth up the stems, and continue this as long as it is in the ground. It will be found quite as useful in soup as if it had been grown in the trenches, and with not a tenth part of the trouble; and in time it will be large enough to eat as salad. The only thing it requires is constantly earthing up as it advances; there will be a sufficient quantity blanched to make it eatable, but a few plants for soups are as necessary as onions, and as wholesome.

LEEK.

Perhaps, looking at the utility of this esculent, boiled, stewed, or in soup, there are few more useful vegetables, and it has the advantage of taking but little room; it may be planted anywhere; it can be used in an alternate row with almost anything, and not require more than a six inch extra allowance between the rows; or if they are planted in rows two feet apart, any crop you please may be planted between them, especially any kind of winter green. Sow the seed in a patch in February. When it comes up, keep it very clear of weeds. As soon as large enough, prick out six inches apart in a piece of well dressed ground, and when it has acquired good strength, plant nine inches apart in the row, and the rows two feet asunder for a crop between, or one foot asunder if no other crop is to be introduced; but lettuces may be planted in the alternate rows, and the alternation of crops looks well if nicely managed. It is as well to earth up leeks, as you would celery, that is, sufficient to

blanch about three inches or so of the plant. Boiled in salt and water till they are tender, and eaten with melted butter like asparagus or sea-kale, the water being changed when half done, the leek is excellent, and when used in soup they should be boiled, cut into two inch lengths, and used in plenty by stewing them afterwards with the soup itself. The leek is not sufficiently cultivated among cottagers; and some object to them on account of their very strong flavor, while boiling them and throwing the first water away just before they are quite done, renders them as mild as a Spanish onion; whereas, there are many advantages in their culture that should induce them to be adopted to a great extent, if not preferred for the purposes to which onions are generally devoted.

ASPARAGUS.

Here we are getting to something rather extravagant, but there is nothing but economy to prevent its culture, and our business is to show how easily it can be done if wanted. Trench a row of soil eighteen inches wide across or along any quarter of the garden that is open, put a good four inches thickness of dung between the lower and upper spits of earth and tread it in, then throw in the top spit, which should be of itself in good heart. In the centre of this trenched ground draw a line tight, and within a circle of six inches place half a dozen seeds every eighteen inches along the row; four feet from this, do another, and so occupy as much ground as you like with rows at these distances. The object of placing them at such a distance is to have crops between. This sowing to take place in February, March or April. When the seed vegetates, the place may be kept clear of weeds, and when it can be seen which of the plants take the lead, leave the strongest, two in a place, and keep them very clear from weeds. In the mean time the ground between these rows may be cropped with anything that may be required, so that there be room left for the young plants of asparagus to grow. When the haulm turns yellow it may be cut down, and in cropping the intermediate ground, care must be taken to avoid injuring the roots, which will be found near the surface; a little soil may be hoed towards the stems, so as to have the effect of covering up the roots a little, as a sort of protection, and forming a slight ridge, that it may be seen where the rows are. The principal object is to keep clear of weeds. Cut down the haulm at the end of the growth, and slightly earth up, to keep the row conspicuous when there are no plants to show it, and avoid damaging it in minding the other crops. After the third year you may calculate on cutting, and the only way to do this with advantage, for your own eating, is to let the buds grow a good four inches above the surface, and then cut it even with the ground. All the trouble of forming beds, and earthing up eight or nine inches, is saved by doing without the long useless stem which market bundles have, and instead of being a troublesome thing, involving considerable labor, to form the beds every autumn, there is no more trouble than there would be with a cabbage crop. For family purposes the asparagus is better, the roots are less exhausted, the ground less interrupted or interfered with, and, in fact, the luxury is no more trouble than a crop of broad beans, or a row of scarlet runners. In cutting this vegetable, care must be taken to avoid injuring the root. On cutting down the stems after the first year's cutting for use, a good dressing of dung should be laid at top, and a little soil thrown on it: the immediate effect of this is beneficial, and it scarcely more than reinstates the soil, for it washes away from the roots, and in time would expose them altogether; but there is to be no professed earthing up to lengthen the buds as if they were for market, for that does away with the simplicity and economy of this mode of treating it, which is reducing its culture to the same trouble as almost any other vegetable, and the quantity eatable is nearly treble that which can be found in the marketed asparagus.

CAULIFLOWERS.

This highly esteemed vegetable is economically or extravagantly grown, according as it is required in or out of season. If sown in March, pricked out when large enough into a well dressed bed to gain strength, and planted out in its final place in June, there is no more trouble required

to grow cauliflowers than cabbages. It is only when sowing in frames and protecting under hand-glasses are resorted to, for the purpose of producing early maturity, that the thing becomes extravagant, because of the labor necessarily expended on it. Many vegetables are of the same nature; if we were content to have them in their natural season, they would cost us but little; but to obtain them out of season much labor and expense is frequently incurred. Sow, therefore, on a warm border in March. In April they will be large enough to prick out, three or four inches, or say six inches, apart; these will have attained such strength in June as to be planted out in their final destination in the garden, and come in well for use in the fall of the season. If you sow on a slight hot-bed in January, and when large enough prick them out in a frame, but without much heat, and bring them well forward by April and May to plant out, you may get them much earlier. If you desire to have plants to go through the winter, sow in August, prick out where they can be covered with a garden-light, and stand protected all winter; but the strongest may be planted out under hand-glasses, three or four under each glass. In this case, great care has to be taken about keeping the glasses down in cold weather, and during heavy falls, and taking them off altogether, or tilting them, in any mild weather. As they grow large enough to crowd each other under the glasses, take away the weakest, and plant them out in the open ground, leaving only one, or perhaps two plants, to complete their growth, under each hand-glass; as they show their flower the leaves should be bent down, to keep the sun off, that the colour may not be injured. Cauliflowers should be planted out as a general crop two feet apart one way, and eighteen inches the other; but under hand-glasses there must be room for the hand-glasses to be taken off and placed in the row when the plants are at their largest size. The best sorts are Walcheren, Asiatic, and Early.

BROCOLI.

Here is a varied and an excellent crop, and occasionally a cheap one. It is, however, one which no poor man ought to trust. Of the varieties, choose Grange's early white, Chappel's cream, Somers's superb, Chappel's white Roman, Purple cape, White cape, and early sprouting. The latter is the most useful. From January to June this vegetable might be sown every month, pricked out six inches apart as soon as it is large enough, and planted when strong enough. In this way brocoli is obtained from various sowings and plantings all the latter part of the summer and through the autumn and winter, unless it be very untoward weather. The sprouting sort is a very delicious and economical vegetable; it eats well with anything, gives a good supply for a long period, and requires but little labor. The best season for sowing all the sorts is February and March, half each month. As soon as they have four rough leaves, prick them out in an open space, six inches apart, taking the strongest plants from the seed-bed each time; you will thus get several different seasons out of each sowing. As soon as they have attained the necessary strength, begin to plant some out, either between crops of other things that are coming off, or in quarters devoted to them; but we are always anxious, as a row of anything is off that will admit of being replaced, to get something on the ground. Brocoli thus put out in a moderate garden, as room is made by other things coming off, must come in well at some time or other, and if one season misses all cannot. As soon as the plants which are put out for good, begin to grow, the earth ought to be drawn to the roots, and after this, little or no care is necessary.

ENDIVE.

This is a hardy salad, and may be cultivated in small quantities with advantage, sown in April, May, and June, and planted out when large enough on a bank sloping to the south; it is a fine wholesome salad with beet-root and lettuce, or with red cabbage. When the plants are large enough these must be blanched by tying them up like lettuces, or by laying tiles or slates, or flat pieces of board, on them; one foot apart all over the bed would do for distance at planting out, and it is very little trouble.

SEA-KALE.

Another luxury; little or no trouble when

cultivated for its proper season, and only costly when forced. For instance, many acres are grown that are merely put out in rows and earthed up. When the sprouts come forward they break the earth on the surface, the cultivator then removes the earth low enough to enable him to cut off the shoots down clean to the crown of the plants. Here, as neither fire-heat nor dung is used, it cannot be said to cost much. The proper mode of cultivation is to sow the seed three or four in a spot, these spots being eighteen inches apart in the rows, and the rows three feet apart. When they have vegetated, keep the strongest and take away the others, which may be transplanted in continuation after the same plan, and, if carefully done, will not be much behind those that have not been disturbed. They may grow on for three seasons with nothing more than the earth drawn up to the roots, and being kept clear of weeds. Now if you have large flower-pots, or kale-pots, they may at Christmas be covered over the individual plants, and be surrounded by dung from the stable or leaves, the plants will shoot much sooner than if they were only earthed up; but the least trouble is to earth up the rows into a flat-topped bank by digging an eighteen-inch trench between the rows and putting the soil that comes out upon the plants, covering them eight inches. In the spring the plants begin to shoot, and when they break the surface it is known that the shoots are long enough for the purpose, and that they may be uncovered and cut, but those under the pots covered with dung or leaves will have been forward enough to cut weeks before. Sea-kale, however, is not an economical vegetable, because the ground, like an asparagus-bed, is occupied the year round for one crop. This can be in part counteracted by cropping between the rows as soon as the kale is cut, for the bank is then levelled, the plants allowed to grow till the autumn, and all this time lettuces may be planted out and got off the ground; or spinach, or a couple or three drills of turnips sowed directly the kale is done with, will come well into use before the plants need be earthed up again.

CUCUMBER AND VEGETABLE-MARROW.

If you can sow in a hot-bed a few seeds of cucumber and gourds to use as vegetable-marrow, and have a spare place in a south border to plant them, the chances are that you get a good supply of both. Sow them in April; grow them singly in pots till the second week in June, stopping the shoots at the second joint; plant them out in June, and there will be a good recompense for your trouble. [No hot-bed is necessary in this climate. Sow the seeds in deep rich soil in the open ground. Ed. Hort.] The vegetable-marrow must not be allowed to grow too large; they ought to be eaten before the seeds are formed: while young they are like marrow, but after a certain age they become a mere jelly, and when they lose their firmness and swell they are watery, faint, and unwholesome.

LETTUCE AND OTHER SALADS.

Lettuce, corn-salad, small salad, and other herbs for the same purposes, may be sown each month, but corn-salad is by far the most economical of all the small salads, because you keep picking from it the leaves, and they grow again continually. Lettuces, both the cos and the cabbage sorts, may be sown on a warm border in February, March, April, May, June, and July, and in frames, or with some protection, all the rest of the months. They may be watered and drawn out for planting according as they get strong enough, and ground is vacant. There is no season to regulate their growth any more than their consumption, but it may be taken as a general rule that the cabbage kinds are the most hardy, and do with least trouble all through winter, and that, as they want protection, even when sown in February, in an open border, the best way is to sow them with onions for pulling young, and with radishes to draw young, and the same litter that covers for one will cover for all. Lettuces ought to be planted out a foot apart in the row, and eighteen inches from row to row. Radishes, like other salads, may be sown every month, if the demand warrants its being done, but in the summer time so many things crowd in upon the gardener that he hardly knows what to be at, so that he ought well to study not only the most usefu l vegetables, but also those which are longest in perfection when once produced.

PEAS.

Here we have a keeping as well as a perishable stock. It is not the most desirable crop for persons of limited means, but it is to be taken into consideration that what are not eaten green are good dry; there is no reason why a man should not grow his peas for soup as well as his celery, and no dry peas can be better than those he saves and ripens himself. It is a general notion that peas are not split for soup and puddings, till they are too old to grow, and it may be readily supposed that what a man grows himself he can depend on. There is no difficulty in bruising peas, and new ones shall swell better, and taste better, than old ones. Peas, therefore, may be looked upon in the light of a double crop, if wanted, or a safe crop if saved all for harvest. Of the hundreds of varieties in cultivation, many have very equal claims; novelty may do something for a pea, and, of course, there are some which have both novelty and excellence to recommend them: we have found all the following to be good:—Cormack's Prince Albert, Shilling's early grotto, Flask's victory, Ward's incomparable or British Queen, Knight's improved dwarf green marrow, Groom's dwarf, Waite's Queen of the dwarfs, Girling's Danecroft early, and imperial. The Early frame, Charlton, and many others, are, however, still favorites. Peas may be sown from November to July every three weeks, but it is for a man to consider whether he ought to devote much or little ground to a crop which, if eaten green, is a luxury of some cost, and if saved dry may cost more than they could be purchased for. However, there is a great fault among pea-growers; they sow the seeds much thicker than they ought to be sown, and therefore waste a great deal. Peas ought to be sown in drills, and if there were half the quantity usually sown the crop would be heavier; when up above ground, earth ought to be drawn up to their stems; the soil bruised and closed about their roots, and brought up to a kind of bank on the cold side of them; sticks should be placed to them at the same time, and after this they only require to be kept clear of weeds, and in parching weather to have water.

RHUBARB.

This has become so general a favorite from its wholesomeness and flavor, in seasons when fruit cannot be had, and is moreover so strongly recommended to families, that a portion of the garden ought to be devoted to a few good roots—a dozen will be found enough for a moderate family, and they ought to be two feet from each other every way. The ground should be well dressed, the plants young, the season autumn. They should be planted without bruising their roots, and they will do all the rest themselves. If wanted earlier in the spring than they will come naturally, put a box, or rather a wooden trough, two feet high and one foot diameter, over a plant, cover the open end that is uppermost with a flat tile or a proper cover, and surround the whole with dung or leaves; it will hasten the growth: or pot up a strong root or two and put them in a warm cellar, or a kitchen-cupboard, or a green-house, or any other place where the temperature is raised; but it is never so good as from the natural ground, grown in the natural way.

SPINACH.

The winter spinach is the most useful and economical, and is as good in summer time as in winter. The difference between this and the round-leaved is, that the winter kind takes longer to perfect the plant and seed it than the round-leaved does, and, therefore, it is longer eatable. It is not pulled up as one-half the spring spinach is, but the leaves are picked off from time to time as they grow, and a good bed of spinach yields for a long time. The round-leaf spinach will be better for the same treatment, and looks much larger for it, but it is not so long in perfection. Spinach of either kind may be sowed in drills eighteen inches apart any season, but it is usual to sow the round-leaf from January to July, and the prickly, or winter, from August to October. If it comes up too thick, pick out some when they are large enough to eat, and thus thin it, when you can use the surplus.

GENERAL OBSERVATIONS ON GENERAL SUBJECTS.

Many other subjects might be mentioned under separate heads, but we have gone

through all that concerns those who wish their gardens to be usefully productive; we have not devoted a chapter to the herb bed because it is so very simple, and forms a subordinate part of the establishment, though highly useful. It is not very difficult to procure a plant or two of sage, mint, thyme, marjoram, and other herbs; and very little of these will do for a large family. Parsley is a more generally useful herb, and is raised from seed; any of the perennial herbs will tear to pieces and strike like weeds; and parsley should be sown twice or three times a year, and any root whose leaves are not double and curled, should be pulled up. There are many subjects in a garden that we have not mentioned: we have not touched on fruit; our sole object has been to treat of those things which are more or less necessaries, or profitable stocks, and, although we have treated of several things that a man may cultivate as luxuries, no person with limited means ought to lose sight of the one great object of appropriating every rod to something that he can sell if he cannot eat it, or that he can keep for a considerable time if he can neither sell nor eat it. These will be found to have been mentioned pretty nearly in the order of their importance, taking into the account their value as stock or their saleable nature as merchandise, for such, in truth, food as well as raiment is, and when a man can choose the stock he will produce, he ought to be doubly considerate how he misapplies a rod of his ground.

A gardener is none the better for wanting extravagant implements, but proper ones he ought to have, for being obliged to make shift with one thing for another is a sad loss of time. Hoe, rake, fork, spade, garden line, knife, good strong box-barrow, broom, basket, and dibble; all these things are necessary. There is also a proper way of keeping them; they need not be all in morocco cases and mahogany boxes, but at the same time we should like to see them taken somewhat more care of than our artist has bestowed on them. To be plain, a gardener, like a prudent housewife, should have a place for everything, and everything in its place, when not in use.

DESIGN FOR A SUBURBAN COTTAGE.

In our last number, we gave a design for a villa of the first class, in point of size and architectural style. The FRONTISPIECE to this month, shows a suburban cottage of very moderate size, intended to come within the means of those who have only a few hundred dollars to expend in a dwelling, who can afford little ornament, and who still desire to get something comfortable, and agreeable to the eye.

There is no effort at the ornamental in this design. It is simply getting the most convenient arrangement of the interior, in the most *compact* form, viz., that of a square. The little veranda, formed of lattice work, and intended for vines, is the only decided approach to the ornamental, though the mere projection of the rafters, gives the roof something better than the usual common place character.

This design is intended to be constructed of wood, the weather boarding put on in the *vertical* manner, described in our first volume, and familiar to most of our readers.

The plan of the first floor shows a hall, kitchen, parlor and bed-room,—all, indeed, that a family, wishing this kind of cottage, need on the first floor, so snugly arranged that not a step need be lost in the working operations of the family. The entry or hall is larger than is usual in houses of this size; and the enclosed porch, or back entry, serves to shelter the back door in winter, and might, if preferred, be taken away altogether in summer.

The second story plan shows an upper

entry and four good bed-rooms. The chimney flues are all drawn into one stack in the attic, and the roof is covered with shingles. The first story is ten feet, the second nine feet high.

Our principal object in giving this plan, is to show a convenient and compact mode of arranging the interior of a certain class of village or suburban dwellings, so as most to promote the comfort of those who build this class of cottages, and who have little time to plan for themselves.

HOW TO GROW EVERBLOOMING ROSES.

BY AN AMATEUR, NEW-YORK.

Dear Sir—No doubt many of your readers, like myself, think there is nothing, in all the range of the flower-garden, so beautiful and so satisfactory as the everblooming rose. A plant that blooms all the spring, summer, and autumn, and whose blossoms are the perfection of beauty and fragrance, is indeed entitled to all the affection which lovers of flowers are likely to bestow on their greatest favorites.

But some of your readers, as well as myself, may, it is not unlikely, have noticed that in some soils these roses grow and bloom almost without care, while in others they are always poor, stunted little things.

I wish to say a few words about this difficulty in cultivating fine roses, especially as regards strong soils, and indeed all soils that are not very well drained and porous below.

In my own garden, the underlayer or substratum of which is a fat loam, these roses thrive very poorly, when planted out even in a rich border, if planted without preparation. They make a poor growth, and give but few flowers, instead of growing luxuriantly, and blooming abundantly.

It was some time before I could discover the reason of this. At last, an experienced rose-grower, to whom I complained, explained the difficulty, by saying—"what is at the *bottom*? You can never grow roses unless they have a good drainage." A little further inquiry enabled me to discover, that he meant, that when there is a stiff loamy or clayey subsoil, so that the water does not pass off freely, the moment the roots of the rose touch this clay the plant stops growing.

Under his direction, I immediately prepared three or four circular beds for everblooming roses, by laying all the top soil on one side, and digging out and rejecting all the stiff subsoil. This made the hole two feet deep. I then filled it up with small stones six inches deep, and mixing with the good soil sufficient rotten manure and pieces of sod, chopped fine, to make a good mould eighteen inches deep. I planted the beds, so prepared, with the best Tea, China, and Bourbon Roses.

The result surpassed my expectations. Every plant grew, as I never before saw those everblooming roses grow,—as they never grew before in my soil,—and produced flowers such as I had never expected to see, both as regards size and beauty. This is now five years ago; and since that time, I have not planted a single fine rose without preparing proper *drainage* for it, and I have uniformly met with the same success. I therefore recommend the practice with confidence to all your readers

who wish to succeed in growing tender roses.

I should also add that, with this dry subsoil, all tender roses are more hardy than when planted in the common way; and that even the Tea roses stand the winter here, in this way, with a slight covering in winter.

And now a word or two to beginners, respecting a nice selection of everblooming roses. I have had some years of experience in the matter, and venture to recommend the following sorts, as really beautiful, and deserving of general attention:

Bourbon Roses. Souvenir de Malmaison, *pale blush;* Princesse Clementine, *violet crimson;* Mrs. Bosanquet, *waxy blush;* Pourpre Fafait, *crimson purple;* Madam Desprez, *bright rose;* Acidalie, *white;* Cornice de Seine et Marne, *bright red;* Dumont de Courset, *dark crimson;* Hermosa, *pale rose;* Compte d'Eu, *bright red.*

Tea Roses. Devoniensis, *large, cream colour:* Clara Sylvain, *pure white;* Goubault, *large rosy blush;* Josephine Walton, *pure white;* La Sylphide, *rosy buff;* Mansais, *buff and pink;* Princess Marie, *rosy pink;* Strombio, *rosy white;* Eliza Sauvage, *pale sulphur.*

Noisette Roses. Aimée Vibert, *snow white;* Chromatella, *fine yellow;* Jaune Desprez, *rosy buff;* La Marque, *white;* Le Pactole, *pale sulphur.*

China Roses. Lady Warrenden, *pure white;* Madam Breon, *bright rose;* Eugene Beauharnois, *rich crimson;* Cels, *blush;* Agrippina, *deep crimson.* Yours, truly,

An Amateur.

New-York, April, 1849.

ASIATIC, OR LARGE FLOWERED TORENIA.

[The following account of a new plant, said to bear the most beautiful of all blue flowers, will interest our floricultural readers. It has just been introduced by some of our leading plant growers. Ed.]

To this pretty genus of plants we have recently had some accessions, which will become valuable ornaments of our gardens. The best, in every respect, is that of which an engraving is here introduced: nothing can exceed it in the richness and the softness of its colouring.

In noticing this plant on a former occasion, (*Annals of Horticulture*, ii. 553,) we took the opportunity of expressing a doubt whether the statement that the plant was an annual was strictly correct. The statement was made in the *Botanical Magazine*, where a beautiful figure of it was published last year. Nothing in the appearance of the plant, at the time our notice above referred to was written, would seem to warrant the belief that the plant was annual,

Fig. 55.—*Torenia Asiatica.*

and our further experience of it does but confirm our former supposition: hundreds of plants raised from cuttings last year,

along with calceolarias, cupheas, and similar sub-shrubby plants, have been preserved through the winter, and planted out into the flower garden; and the old plants which blossomed last season are now vigorous, and blossoming freely again. It was, moreover, said to be a stove plant; but this, too, is incorrect; for it has been preserved during winter in the temperature of a green-house, and has been grown and flowered well in such a situation. Moreover, experience has shown it to be a plant suitable for bedding out in flower gardens, though here, we presume, it will always be found to do best in the warmest situations, all other conditions being equal.

The plant is of diffuse branching habit, with quadrangular, flexuose stems, bearing opposite ovate, or ovate-lanceolate, coarsely serrated leaves, from the axils of which other branches, and towards the tips of the shoots numerous flowers, are produced; the flowers grow on separate stalks, but sometimes several — three or four — together, from the same axil; they are shaped something like the flowers of a mimulus, only they are divided into four instead of five lobes, the lower of which, and the two side ones, each bear a large deep purple blotch, and the throat, or centre, is of the same colour; down the centre of the lower segment is a pale streak; the rest of the flower is a clear, soft, porcelain blue-lilac, of indescribable tint. It is a very free flowering plant, blooming throughout the summer and autumnal months.

Viewing the extensive range which it occupies in a wild state, one would be prepared to find it possessing much hardihood of constitution, even though it be East Indian. It is recorded as growing throughout Bengal, in Amboyna, Ceylon, Mergui, Chittagong, Sylhet, and in the Madras peninsula. It is also widely diffused in alpine regions, and hence our success in cultivating it in a low temperature.

The plant is easily cultivated in any light rich soil, and propagates with the utmost facility by means of cuttings. Probably its beautiful tint of colour will be best brought out and preserved by affording it some shade from intense sun-light.

IMPORTANT TO CULTIVATORS OF THE GRAPE.

The necessity of studying the composition of the different fruit trees, in order to supply precisely the elements they need, to maintain them in the highest state of thrift and productiveness, is only every day more apparent. The failure of certain sorts in some soils, and their success in others, is no longer wholly a matter of mystery, since we know that upon the presence or absence of certain salts or minerals in the soil, the health and perfection of certain fruits largely depend; and since the facts are now well established, that soils robbed of potash and lime by long continued cropping, will no longer give good fruit, unless these substances are replaced, we are led to investigate, as closely as possible, the chemical composition of different fruits, in order to apply precisely the necessary food, and no longer to work in the dark.

A good deal of attention has been attracted lately to an article bearing directly upon this subject, which has been read by M. Persoz before the *French Academy of Sciences*, Paris. We copy the following translations of it from a foreign journal, for the benefit of our readers.

It will be seen that M. Persoz goes farther than most cultivators. Recognising the well known fact, that the analysis of the *growing* parts of a plant show a chemical composition quite different from the analysis of the fruit and seed, he varies the special manures which he uses, so as at one time to assist most completely the produc-

tion of wood, and at another the production of fruit.

The following is the paper alluded to, which, it will be seen, relates chiefly to vineyard culture:

"The new process which I propose for cultivating the vine, inasmuch as it enables us to make use of half the land for growing nutritive plants, may, at first sight, appear to differ completely from the plans now adopted in vineyards. Such, however, is not the case; and, as those who have studied the various methods adopted in different countries will see, several of the recommendations here made have already been followed in practice. I acknowledge this the more readily, as it enables me to appeal, as a proof of their usefulness, to results attained by long experience. In one respect, my plan differs from every other; for I propose that all the vine stocks, in a certain space of ground, should be brought together in a trench, where, by one chemical action, the wood, and by another the fruit, may be induced to form. This I propose, in consequence of having, by direct experiment, satisfied myself that, of the manures which are fit for the culture of the vine, some seem exclusively for the increase of cells, i. e., of wood, and that others cause the development of the flower bud, (fruit or grape;) and that the actions of these substances, instead of both going on at the same time, ought to be successive. By the application of these principles, the growth of the wood can be stopped at pleasure, while, by the ordinary methods, the same effects can only be produced by artificial and empirical means.

"When it is wished that wood should be developed, the vines [roots,] must be placed in a trench, and covered with three or four inches of earth, with which have been mixed, for every square yard of the surface of the trench, 8 lbs. of pulverized bone, 4 lbs. of pieces of skin, leather, horns, tanners' refuse, etc., and $1\frac{1}{2}$ lb. of gypsum.

"When the wood is sufficiently forward, which will be in a year or two, according to circumstances, the roots must be supplied with salts of potash, in order that the fruit may be produced. For this purpose it is necessary to spread over the trench, at a distance of three or four inches from the buried wood, [roots,] $5\frac{1}{2}$ lbs. of a mixture formed of silicate of potash, and $2\frac{1}{2}$ lbs. of double phosphate of potash and lime. The trench is then to be filled up, and the roots have as much potash as they want for a long time. To prevent, however, the exhaustion of the potash, it is as well to spread, every year, at the foot of the stools a certain quantity of the *marc* ["cheese," or refuse of the wine press,] of grapes; this marc, containing 2.5 per cent. of carbonate of potash, will restore, annually, a large proportion of the potash which may have disappeared from the trench.

"Hitherto, the success of a vintage depended, *cæteris paribus*, in a great measure, upon the influence of the atmosphere. Thus, suppose a vine stock required 10 parts of potash to be enabled to bear fruit; if the action of heat and rain on the stones and earth, in a state of decomposition, could only furnish 5, the vintage would be bad. This danger will be avoided by the above system of culture, in which the vine must always have suitable food; but it is not to be forgotten that, although I promise those grape-growers who follow my plan an abundance of produce, I can by no means insure the quality of that produce; for quality must alway depend on the temperature."

We will add one consideration to the foregoing. Every horticulturist in America deplores the fact, that, while the peach,

the apricot, the nectarine, and even the orange and pomegranate, flourish in great perfection in the United States, yet in no portion of this country does the foreign grape succeed well in the open air.

It has occurred to us, more than once, that although this is doubtless attributable, in part, to our sudden variations of temperature, yet it may also be largely owing to some deficiency in the soil. What is this deficiency? We suspect SULPHUR. All the famous wine districts in Europe are more or less *volcanic* in their origin, and many of them are old lava beds, abounding in sulphur; while, on the other hand, volcanic soils are unknown to our grape-growers, as well as the application of sulphur in any form to the soil.

We are strengthened in this opinion by observing the striking fact, that, while the analysis of the ashes of the foreign grape shows only about 2 per ct. of *sulphuric acid*, the analysis of the *must*, pulp, or juice of the ripe grape, shows more than 13 per cent. of *sulphuric acid*,—a most extraordinary increase; and we believe a larger per centage than is found in any other fruit. (The *potash* in the ashes of the vine is 25., while in the ripe fruit it is 37.; while, on the other hand, the portion of *lime* in the wood is 40. to 6. in the fruit.*)

Reasoning from this, we should say that gypsum, (plaster, or sulphate of lime,) which is sulphuric acid and lime in combination, is largely demanded by foreign grapes, to bring them to a ripe state; and that in our soils, (which are not volcanic,) it must be an excellent application for the foreign grape. Perhaps bones, dissolved in sulphuric acid, (as described in a former page,) would be still better. We are making some experiments, with a view of testing the value of this theory, and state it now, in this hasty manner, to invite the co-operation of other experimental horticulturists.

FOREIGN NOTICES.

THE PINE APPLE.—There can be no question that, in these days of inquiry, gardeners are investigating the matters under their care with an earnestness entirely unknown to the patriarchs of the art. Things which proved insurmountable difficulties to them, are no longer so to the men of the present day, who take nothing for granted, but who apply the talents with which they are endowed with a vigor and a resolution unknown to our forefathers. True, some are yet content to linger in the rear, cavilling and doubting, and faithfully adhering to the old system of stooking and steaming night and day, summer and winter; because they have heard somehow, it matters little where, that, to fruit a Pine plant, it must have a desperate heat, as it comes from the tropics, where the thermometer not unfrequently indicates 100° in the shade. They have, besides, read and practiced, but never questioned the propriety of the statement, that "the bark bed is obliged to be stirred, turned, refreshed, or even renewed several times a year, so as to produce and retain, at all times, a bottom-heat of from 75° to 85° in each of the three departments of Pine culture. Such directions as these remind us of the books on physic, which instruct us to take so many doses annually, and to double the quantity in spring and autumn, as if a man in health required either the one or the other.

The men above alluded to are incapable of believing, because, in their easy bliss, they think the thing impossible, that, at Meudon, Mr. Pelvilain has (in a small pit that barely holds them,) 44 plants, which, planted in March and cut in August, produce in round numbers 350 lbs. avoirdupois, or fruit averaging 8 lbs. each! The plants which produce this result have, during winter, an atmosphere just a little above green-house temperature. They are protected by coverings from frost and sudden variations of climate, and are kept rather than forced.

Mr. Fleming's success also results entirely from his practice being in accordance with the laws of nature. He keeps his Pines in fruit during night in fine weather at 65°, but in frosty weather he allows the night temperature to recede to 57°.

* In the ashes of ripe plums, the per centage of sulphuric acid is 3., in pears and cherries 5., and in apples 6.

His younger plants enjoy an atmosphere during winter of 55°. Air is admitted to all of them night and day continually; of course, the quantity is reduced in severe weather, but it is never wholly taken off. The leaves of the Trentham Pines are not a yard and a half long, and an inch broad, with a stake to keep them upright, scabby, fœtid with sulphur, or the colour of ripe cucumbers, appearances common enough. The very reverse of this is the case, as all who have visited Trentham can testify. Cultivators of plants like those just mentioned will not, of course, credit that Pines of the size of those produced at Trentham can be grown at all in such an atmosphere, and with the bottom temperature little and sometimes none above the top heat; such is, however, the fact, and such the results, and not at Trentham only, but at other places where gardeners are determined to swim and not sink, and to distinguish themselves from the potter's clay, which exists in the gardening world about them.

It is well known to intelligent cultivators that the Pine apple has been more frequently roasted to death in this country than killed by cold; and though we do not believe it can be grown successfully, generally speaking, in the open air, in the climate of England, we nevertheless contend that its successful cultivation can be satisfactorily attained in a lower night temperature than has hitherto generally been applied to it. *Gardeners' Chronicle.*

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Manure-water for Pot Plants.—Many—indeed most—plants grown in pots may, at particular periods of the growth, be advantageously treated with liquid manure; these periods are chiefly during the time of making vigorous growth, and of blooming. Inexperienced persons, however, are liable to do material injury from using it too strong or too often; or they fall into the other extreme, and derive no benefit from the application. A very useful liquid manure for pot plants may be made by putting the following ingredients into a hogshead of rain water:—two pecks of sheep or deer dung, one peck of soot, and two quarts of Potter's guano; these ingredients are first to be well mixed up to the consistence of paste, with boiling water, and then mixed with cold water. Stir the mixture frequently for a day or two, and then throw in a quart of quick lime; when the liquid has become clear it is fit for use. For all strong growing plants this may be used daily, or every other day,—applying it diluted with about one-third of clear water. For heaths, and similar delicate rooted plants, and even for orchids, it will prove beneficial, but to these should not be given oftener than once a week. As before observed, it is only to be used—at least by the inexperienced—during the periods of growth and blooming. *London Hort. Magazine.*

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Pelargonium Lucia Rosea.—This variety is in its habit and appearance much like one of the class called "scarlet" pelargoniums. It is a very compact growing plant, with short-jointed stems, and good sized leaves, of a soft velvety character. The flower-stems are strong, and grow erect, so that the trusses of bloom are brought well above the foliage; the colour of the flowers is a most delicate soft pink, or peach blossom, with a lovely white eye,—altogether a distinct colour among pelargoniums. It is a gem for the flower garden, being not only perfectly distinct, but also superlatively beautiful. Sometimes, when kept in pots, and not very freely grown, we have observed it to produce but small trusses of bloom, but this improves when it is growing freely in the open garden. Probably, however, it may in time be improved on; in the mean time it may chiefly be valued for its novel colour. *London Hort. Mag.*

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Raspberries.—The mode (Fig. 56,) of training these has been kindly forwarded to us by a

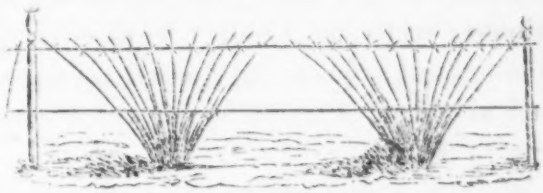

Fig. 56.

correspondent. The uprights between every two or three plants are iron, and the horizontal lines, to which the canes are attached, tar-rope. The following wood cuts, which we borrow from p. 836 of our volume for 1842, represent a much

Fig. 57.

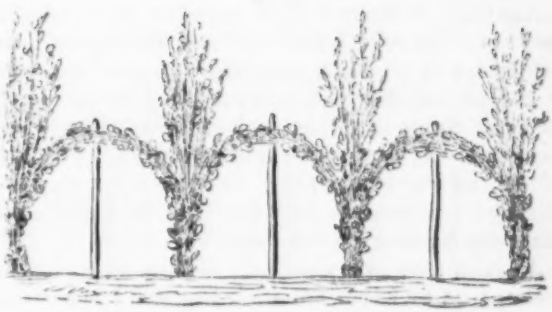

Fig. 58.

better mode of training raspberries. The plants are supposed to be placed in rows 4 feet apart, and about the same distance from one another in the row. The number of shoots on each is regulated during the growing season, no more being allowed to remain than the plant is capable of supporting. In most cases 6 or 8 shoots will be sufficient. Where this method is practiced, a row

of raspberries in autumn will have something of the appearance represented in fig. 58; the arched portion, tied to the stake in the centre, being the canes which bore fruit last year, and which must be cut down to the bottom, and be replaced by the upright shoots of last summer, trained in a similar manner to those represented in fig. 57. *Gard. Chron.*

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Eight Conservatory Climbers.—1. *Combretum purpureum*, or, as it is now called, *Poivrea coccinea*, a half shrubby plant, with oval leaves, and branching spikes of scarlet flowers, with conspicuous stamens; it will flower all the summer by stopping the strongest shoots occasionally. 2. *Echites suberecta*, a beautiful yellow flowering plant, which has generally been grown in the stove, but will answer well for the conservatory by spur-pruning, like the vine; it is a very strong grower. 3. *Ipomœa Horsfalliæ*, a splendid plant, with deeply lobed leaves, and bunches of crimson blossoms; should have a warm close position. 4. *Mandevilla suaveolens*, a very fine grower, with hairy oval leaves, and bunches of white deliciously fragrant flowers. 5. *Passiflora racemosa*, a splendid crimson passion-flower, which will flower freely nearly the whole year; does best grafted upon one of the hardier sorts. 6. *Plumbago capensis*, an easily grown plant, with long slender stems, bluntish leaves, and good sized bunches of pale blue flowers; may be had in bloom from April to November, by cutting back some of the strongest shoots in summer. 7. *Stephanotis floribunda*, a beautiful evergreen plant, with dark green shining blunt oval leaves, and bunches of white deliciously scented blossoms; it is a splendid thing when planted out in a conservatory border, and grows very fast. 8. *Tecoma jasminoides*, a very free flowerer upon the young wood from July to the end of October; it has much divided leaves, and bunches of white flowers, with a crimson centre. *London Hort. Magazine.*

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Asparagus Beds.—How common it is to see a large portion of a kitchen-garden devoted to asparagus, and yet when you congratulate the owner on the advantages you presume he possesses with his lamb-chops in spring, he tells you his beds are worn out. I once came into possession of a bed which had this character of decrepitude, and succeeded in making it very prolific, and I have no doubt others may do the same.

As it is true in gardening, as well as in philosophy, that *ex nihili nihil fit*, you must take care that your asparagus bed is well supplied with plants, before you proceed to a treatment which will make the plants robust and productive. Sometimes there are gaps of several square feet, or the plants are thinly spread over the whole bed. Rectify this as soon as you can, by marking, in the growing season, all such vacancies, and filling them up in the autumn or the spring. About nine inches apart is a good average distance, although probably a foot would secure a larger product. Having secured a good plant, as agriculturists express it, the next thing is to make it vigorous. Lay down this rule as having no exception—that if your beds have not a vigorous growth in the summer, you will look in vain for fine asparagus in spring. As the succulent shoots proceed from the buried root, their size must be in direct proportion to the healthfulness of that root, or to the quantity of organisable matter that root has stored up. How, then, can the root be brought into a proper state for producing large shoots? By giving every advantage to the plant during the summer and autumn: so that if your beds this summer are covered with a tall and strong vegetation, the abundance of solar light, &c., will convey a proper supply of matter to the root for next season, and you will cut fine asgaragus; but, on the other hand, if there appears only a stunted and weak growth, your produce will be small.

If the principle just laid down is correct, the mode of treatment must consist in judicious cutting, and the application of proper manure. I know many beds which have been ruined almost by an unsparing cropping, and in cases where there has been no deficiency of manure. If the bed has been injured in this way, or if from any cause the shoots appear thin and spindling, do not cut them at all, but let the bed have a rest during a whole season. The next spring the advantage will be manifest. Nothing would tend more to bring exhausted beds round than this generous treatment, and by the sacrifice of a few dishes now, you will secure an abundance next year. What is true of a whole bed applies also to individual plants. I always leave the weak shoots in the beds, on the presumption that by cutting them they will become weaker, but that they will make robust shoots by being allowed to grow and bask in the air and the sun. My remarks also lead to another practical conclusion—to leave off cutting in time. Fine shoots must not be looked at with a longing eye, as though it were waste to let them run to branches and flowers. They are the parents of a future race, and ought to be kindly and respectfully treated.

Manure must be plentifully given in conjunction with the above mode of treatment. It should be applied at such times that the growing plant may receive the benefit. It is possible for a top-dressing put on in autumn to have all its valuable properties washed below the reach of the roots, before they begin to exercise their vital powers. However, cover the beds with good dung in autumn, but do not neglect to furnish a fresh supply in spring. Salt and liquid manure should be used at the latter period, as they become immediately available. I have just dressed my beds in the following manner, and it is not too late for others to adopt the plan. I covered them with salt, so that on a dry day the whole surface looked as though it had been snowing; they were then watered with about 60 gallons of liquid manure

saved from a stable during the winter. When this had sunk in, the beds were raked, stones picked off, and a neat appearance given them. If you have no liquid manure, make some by diluting good stable dung with soapsuds, &c. As the roots will soon begin to move, the soil will be furnished with those materials which will ensure a quick and strong growth, and, if the beds were healthy last year, you may depend on a crop.

As I have been able by this treatment to make old beds of asparagus to produce fine crops, I can recommend it; and I hope amateurs will themselves study the *rationale* of the practice. It is to be regretted that so many gardeners are contented with the "light of other days," and fail to use modern improvements and scientific principles. Although the *Chronicle* has so large a sale, and has for years been endeavoring to enlighten the public mind on these matters, the greater number by far of those who take an interest in gardens never see it. I endeavored lately to explain to a friend the reason of the success of my asparagus beds, and I could see I was listened to almost as an expounder of magic. Digging and manuring are the specifics with most persons, while science is neglected, and the result is, an accidental and occasional success, but at the same time repeated and provoking failures. *H. B. Gardeners' Chronicle.*

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Products of New Mexico—*Maize Sugar.*—"Here I witnessed the fabrication of sugar from corn-stalks. The alcalde owns the mill and boiling house, and the use of these is paid in syrup. The owner of the corn-stalks assembles his neighbors, and, proceeding to the mill, places the stalks, cut into short pieces, into a large wooden trough; and each man, arming himself with a heavy mallet, soon breaks the stalks into small fragments. Boiling water is poured upon them, and then the mass is put into a hollow tree set upright in a trough; into this a plug is loosely fitted, across which a long pole fixed at one end is laid, and all the young people getting upon this lever, the juice is soon pressed out and poured into earthen pots built into the top of a large furnace, kept burning night and day; women continually stirring the liquor, until it is thick, when it is run into small clay moulds, (unless it should be wanted for molasses.) The workmen are repaid by an invitation to the house of the owner of the sugar, where they are regaled with molasses and tortillas."

The Soap Weed.—"We first met, on this part of the road, with the species of palm called by us soap-weed, from the fact that the Mexicans use its root as a substitute for soap, for which it answers very well. Indeed, it is considered superior to it for the washing of woolens. I believe it is rightly named the Lechuguilla. This singular shrub, which is to be also met with on the prairies, but where it never grows to any considerable size, consists of a trunk, very pithy, surmounted by a fine head of stiff leaves, each of which is about 2½ feet in length, and armed at the end with a long thorn. The leaves project from the stalk on all sides, and set as close as possible, and are of a dark green color. The flower is white and very pretty. As each year's foliage decays, it drops down against the trunk, of a light brown color. These dry leaves, when fire is applied, flash up like gunpowder, and burn with a bright light. Our night marches could be marked by their flames, which, as the nights were cold, (although the days were comfortable,) were cheering. I have been thus particular in describing this plant for several reasons:—one is its many uses—of the leaves the natives make their hats; also, when dressed like hemp, it is formed into ropes and sacks, looking like the material known as Manilla hemp, though coarser. These plants have a singularly provoking quality; being from two to eight feet in height, they will assume to the eye, in the twilight, the most deceptive forms. To the sentinel they will appear as forms of men; and many an unconscious soap-weed has run the chance of a sentry's shot, from not answering to the challenge of 'Who goes there?'"

American Aloe at Santa Cruz—"In order to obtain the liquor from this Aloe, the leaves are cut off level with the ground, and the root is dug up. The latter is about the size and shape of a quart bowl, and is of a dry, woody texture; but on being piled in large heaps and roasted, it becomes very juicy and tender, and of a sweet taste. The roots are then pressed, and the liquor allowed to ferment; after fermentation it resembles beer in appearance, and somewhat in taste, but a little smoky, and is called pulque. It is drunk very extensively by the lower classes. From the pulque there is distilled a clear, colorless liquor, of a most acrid and burning taste, which is the mescal. It is only fit for a Mexican to drink—he can do it without winking; but I shall never forget a glass of it which I swallowed at San Rosalia, and which was considered of an extra good quality. It appeared to draw my tongue half way down my throat, and took my breath away for an instant. It was the first and last glass of mescal I ever drank."

Agricultural Condition.—"The general appearance of the country has not been previously mentioned. The whole extent of what we had travelled through, except just along the banks of streams, is of the most barren description, being principally composed of a hard yellow clay, so poor that, in most places, grass cannot be raised. I have travelled more than a hundred miles at a time without seeing sufficient grass to furnish my horse with a meal, and without meeting with a stone as large as a pebble. The roads, except in a few places where they happen to cross mountains, are excellent, being as hard and level as a floor. The land can only be cultivated just along the banks of the streams; and there the fertility

of the soil amply repays the farmer, as the crops do not seem to exhaust the ground. Many farmers work the same ground fifty years or more, without spreading upon it a particle of manure. The seasons are also favorable to the husbandman. Rain, however, is rare. Before we left El Paso, which was in January, the inhabitants were plowing, and sowing corn. I have no doubt that, were the Mexicans not so excessively lazy, they might produce anything they chose; but when they have put seed into ground, they think they have done enough; and if it should not come up, and the plant thrive, instead of doing as we should, setting to work to remedy it, they simply 'call on Hercules;' in other words, fall upon their knees at the altar before the priest, tell him how unfortunate they have been, buy a blessing from him, and go home in blessedness. The inhabitants produce maize, oats, wheat, onions, melons, grapes, and several other fruits. I never saw any potatoes, although, as we know, it is currently said that the root grows wild in the southern parts of Mexico. I have seen as fine melons, grapes, and corn in Mexico as I have observed anywhere; and I have purchased onions as large as an ordinary sized dinner plate."—*Edward's New Mexico.*

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New Plan of Cooking Potatoes.—About this season of the year, the skin of potatoes becomes so exceedingly tough that it will not crack in the operation of boiling, the superabundant moisture and other matters contained in the potato cannot escape, and the consequence is that the tuber boils soapy and wet. I believe that cooks peel potatoes at this time of the year because of the toughness of their skins, which emit a disagreeable smell in cooking. I have at all times found that before Christmas, the less water potatoes are boiled in the better, using plenty of salt; but that after that time, and up to the period when the old ones begin to go out in spring, the more water used the better, not with the view of improving the potato, but of obviating the smell, which arises from its skin. In making this and the following statements, I am aware that I am placing myself in the same position with regard to cooks that the bear was in with respect to the bees. By the dab of the wench of all work up to the great Soyer himself, I shall be told that by boiling potatoes at this time of the year with their jackets on, a bad flavor is imparted to the whole mass, and this is no doubt true; but if I advocate the bane, I will also give the antidote. My plan is as follows: Let the potatoes be washed clean with a brush; then take a knife and cut the skin through all round the potato, do the same lengthwise and put them in plenty of water (salted.) It will be found, when the potatoes are boiled, that where the skin was cut, it will have separated considerably, and allowed the moisture to escape. The labor of peeling, moreover, will not occupy one quarter of the time which is required in removing the skins before cooking, leaving out of the question deep peeling, by which the most farinaceous part of the potato passes to the hog tub. If a cook in a large family cannot afford time for skinning potatoes at dishing up time, they might be boiled a quarter of an hour before they are wanted, and put into an oven, where they can be kept hot; but potatoes are best sent to table with their jackets on, for the latter keep them longer hot; and if cooked on my plan, the skins peel off with the greatest ease; all who have tried my method like it uncommonly well. *James Cuthill, Florist, Camberwell. Gardener's Chronicle.*

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Cultivation of Celery.—At a meeting of the Horticultural Society in Regent-street, held Dec. 5, Mr. Cole, gardener to H. Collier, Esq., of Dartford, exhibited some very fine red celery, to which a certificate was awarded, and with it he sent the following account of its cultivation, which we extract from the last number of the Society's Journal. "Herewith I take the liberty of handing you six sticks of celery, of a kind which I have grown for the last three years, and which I think, both in point of size, solidity, and flavor, will be found superior to any which has hitherto been cultivated. The specimens sent are not selected, but are merely examples of a general crop, planted without any object in view beyond that of the supply of my employer's table, and entirely without ever thinking of sending any of it for public exhibition. My stock consists of 600 plants, planted in rows, four feet apart, and the plants 9 inches apart in the row; and I have not a doubt that the whole crop would average 6 lbs. per stick. Not the least remarkable excellence in this celery is, that it will stand 12 months without running or starting for seed, and such a thing as a pipy or stringy leaf I have never noticed so long as I have grown it. For a more substantial detail of my method of cultivation, I may remark the seed was sown the first week in February, and so soon as the plants were large enough they were pricked out in garden soil, rich in vegetable matter, under hand glasses. The trenches were prepared in the usual manner, in the first week in June, by excavating them nine inches deep, and digging in a good dressing of spent dung. The plants were of course strong when they were planted out, and each was removed to the trench with a good ball of earth adhering to the roots, so that, (afterwards receiving a copious watering,) they sustained little or no check. In earthing celery, I generally endeavor to steer between the two extremes of frequently earthing, and earthing only when the plants are full grown, believing that a little earth after the plants are fully established in the trenches, say a month after planting, promotes the rapid growth of the plants, more especially if they receive a good soaking of weak liquid manure, or soot-water, a day or two before they are earthed. Soot-water is an excellent manure for celery; and where worms and other insects are troublesome, a little dry soot

dashed along the rows will be found a preventive of their ravages. The kitchen garden here being upon a boggy subsoil, and below the level of the river Dart, which passes through the grounds, I do not find it necessary to water the plants more than once or twice after they are planted out; but in more elevated situations it is almost impossible to give too much water, always, however, preferring to give a thorough soaking once every fortnight, rather than daily dribblings, which, in my opinion, do more harm than good. Were I so disposed, I have no doubt I could grow this celery double the size of that sent; and to effect this, I should prepare the plants as before directed, excavate the trenches 18 inches deep and the same in width, and fill them with a compost consisting of good turfy loam, peat, and leaf-mould, or thoroughly decomposed cow-dung, in about equal quantities. Very rich dung is not good for celery, and strong manure water should also be avoided. To grow large celery it would be necessary to place the plants 18 inches apart in the row, and the ground should be kept constantly stired about the plants, taking great care, however, to prevent the soil getting into the hearts of the plants during the operations. In a late number of the 'Journal of the Horticultural Society,' I perceive Mr. Errington attributes the coarse and bad quality of the large celery grown for market to the luxuriance of its growth. Here, I venture to assert he is wrong. The bad quality of the celery is attributable to the bad kinds grown, as I am quite sure no person could grow this kind of celery, which has been named Cole's Superb Red, so as to make it either pipy or stringy, or inferior in flavor. Late earthing has more to do with making celery stringy than anything else, as it is quite certain if the leaves of celery are exposed to full light and dry air for a length of time, the tissue will become harder than if the leaves were grown in comparative darkness. We need no stronger proof of this than the acrid flavor of the outer as compared with the inner leaves of the same celery, a fact demonstrating that if the leaves are exposed for a long time they acquire an acrid flavor which no blanching can wholly remove. For an early crop of celery I sow in heat early in January, and prick the plants upon a slight hot-bed; for a second crop in February in heat, as before directed, and for a late crop in March in the open garden."—*Gard. Chron.*

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Preparation for Seed-sowing.—If we take a survey of our neighbors' gardens in the months of May or June, we shall findgreat differences in the state of the crops, some being very much in advance of others, although the soil and situation are in all the cases the same. Peas, Beans, Onions, &c., are more valuable by being produced early, and it is therefore important to know how this can be best accomplished. "When did you sow your Onions?" says one gardener to another, "for they are bulbing while mine are scarcely above the ground." "In the middle of February," is the reply. "How did you manage that?" rejoins the inquirer, "for at that time my ground was so wet that I could do nothing with it." The explanation of this apparent mystery, by which one man gets the start of his neighbor, is simple enough, although in practice the matter is too much neglected.

Some gardeners neglect their ground from the autums until the opening spring reminds them that it is time to bestir themselves, and put in the seeds for the crops of vegetables so highly prized when grown early and well. Acting on this premonition he goes to the garden, and the day being warm and sunny he anticipates no difficulty, and hopes before evening to commit to the earth the seeds he has prepared. But he is grievously disappointed. The first stroke of the spade or fork reminds him that a bright day or two are not sufficient to draw off the moisture occasioned by the rains and snows of the whole winter. His shoes are heavy with the adhering clods, and his spade almost refuses to do its work, and he is compelled to desist. Next day probably it rains again, and it is not until a continuance of March winds have dried up the earth, that he can accomplish his purpose. In the meanwhile his neighbor has sown all his seeds, and they are above the ground. How did he accomplish this?

This more successful gardener came to his beds on the bright day mentioned above, and began, not to dig, but to level the hacks and the trenches which had been thrown up and dug out some months or weeks previously. He found the soil nicely pulverized, and when the spade had thus done its easy work, the rake was available, and the work was done. The secret of his success is, that he had thrown up his ground before the frosts came, and they did gently and quietly, yet effectually, what no skill and labor could otherwise have accomplished. It is this foresight which is indispensable for early seed sowing. Nor is this the only benefit resulting from this trenching in winter. Insects are prevented from increasing, and the soil is more capable of causing a rapid germination of the seed. This work had better have been done before Christmas, but it is not now too late. Let every part of your kitchen garden which is unoccupied be thrown into ridge and furrow, and after a sharp frost you will experience the benefit. Unless this advice is taken you cannot sow early, nor will the operation be performed so well whenever you may do it. *H. B. Gard. Chron.*

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Preparation of Soil for Potting, &c.—Nothing is more vexatious to the amateur gardener, than to find it necessary to repot his plants, and be destitute, at the same time, of the right material. Or perhaps some choice plants are given to him, around the roots of which he sees fragments of a light, porous, and healthy-looking compost, and he looks all round his garden for something of the same quality, in which to pot

them, in vain. This vexation would never occur if a little foresight were exercised; and we will now endeavor to initiate our readers into the art and mystery of making a mould-heap. Humble though such a possession may be thought, it will save much trouble to have one, and tend, more than any one thing besides, to ensure a stock of healthy plants.

Two things are necessary to the soil of all potted plants, with very few exceptions; it must be fibrous and porous. Turn out the plant purchased in a respectable nursery from its pot, and you will find the mould is light and spongy, admitting a free passage to the roots, each one of which may be separated without difficulty and injury from the surrounding mass. Perform the same operation on a plant potted by an unskilful hand, and how great a difference will present itself? The soil is heavy, like a mass of kneaded clay; the roots are heavily embedded in it, so that they will break rather than be separated; and water will with difficulty pass through it. Prepare your heap at once, that all your pots may in future be furnished like the first mentioned, for your own satisfaction and the comfort of the plants. First get a quantity of turf from a loamy meadow; let it be cut rather thick, and then laid in a heap, or, as I have seen done in large gardens, let it be stacked up, and a thatch put on it, to ward off wet. If this be allowed to stand six or twelve months, all insects will be dead, the grass will be decayed, and the whole will be a fibrous mass adapted for almost anything. Add to this an equal quantity of leaf-mould, or leaves thoroughly decayed, and about an eighth part of coarse sand, and you will have a compost to your hand in which any plants will flourish. If you prefer it, you need not mix more than you want at once, and can accommodate your proportions to the various productions you pot. But whichever plan you adopt, the fibre of the turf and the sand will secure you lightness of texture and sufficient drainage, so that when your plants are watered, the liquid will quickly run through.

But what is to be done before this compost heap is made, for a whole season will have passed before turf now stowed away is fit for use? The only advice we have you is, to get materials as nearly like those recommended as possible, and make shift until you are better provided. If your flower beds have had a layer of rotten leaves put on this autumn, the frosts and rains will by this time have brought it to a nice state for use. Beg a little of that, mixed with the lightest soil you can find. Mix up small stones, bits of rotten wood, &c., all together, for those things will secure a drainage, and it is a fatal mistake to pot plants in *fine* or *sifted* soil, as some ignorantly do. Experience will be the best teacher in this matter, and a practical gardener will know as well what soil will do for a plant as a careful nurse knows what kind of bed and clothing will promote the health and comfort of her infant. *Gardeners' Chronicle.*

DOMESTIC NOTICES.

Tea in the United States.—Mr. Junius Smith, of South Carolina, has undertaken, with a great deal of enterprise, the introduction of the tea plant into that state, with a view to the culture and production of tea as a staple crop. He has, we understand, already received several hundred plants from China, and also several pounds of seed, with which to commence operations.

That the Tea plant (which belongs to the same group as the Camellia) may be perfectly acclimative as far north as Virginia, there cannot be a doubt; and we can see no obstacle, if the proper site and soil be selected, to its *profitable* cultivation.

But Mr. Smith must not be disappointed if he fails in acclimating the identical Tea plants imported from China. The experience of scientific cultivators has well established a fact that foreign trees or plants, which are originally somewhat tender in a climate new to them, never become more hardy by a course of cultivation in that climate, however long continued; or by any propagation by cuttings or grafts of those original plants. It is only by *reproducing new plants from seed grown*, (or at least sown) *in the adopted climate* that, the tender species becomes more hardy and adapts itself to the greater vigor of the new climate.

A most complete illustration of this fact, and one directly bearing on this plant in question, has been laid before our readers lately in the account given by Mr. Feast, of the experiments at Baltimore in acclimating the Camellia. He has shown by Dr. Edmundson's experiments that while the original species and varieties of the Camellia suffered greatly when planted out in the climate of Maryland, the *seedlings* raised from those species and varieties have proved perfectly hardy.

We commend this instructing fact to all those interested in acclimating the tea, the olive, or any other half hardy and valuable plants.

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German Greens.—This is a species of *cole-wort* or dwarf kale, which we find a great acquisition to our list of hardy and popular spring vegetables. We received a large package of seed last summer from Messrs. Thorburn & Co., of New-York, with directions for sowing it in August and covering it slightly in winter. We

sowed it broad cast about the last of August, and thinned the plants in the same way as field turnips about the last of September. We left it entirely exposed to all the frosts of the late severe winter, and found it entirely uninjured on the opening of the spring.

With the disappearance of the snow this plant begins to vegetate, and soon puts out a tuft of curled leaves about as large as a large head of lettuce. These leaves are excellent "greens," with a flavor not inferior to, and much resembling that of good brocoli. They may be cut several times in succession, and no plant with which we are acquainted, which is cultivated for the same purpose, will give so large a supply of vegetable food from a limited space of ground as this. This vegetable has long been grown in Europe, but is as yet very little known in the United States. Its great hardiness, productiveness, and the ease with which it may be grown in any soil, will doubtless bring it into very general cultivation.

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Agricultural College.—By direction of the legislature, the Governor of the State of New-York has appointed a board of eight commissioners, (one from each judicial district) who are to meet at Albany and "mature a plan for an Agricultural College and experimental farm," to be laid before the Legislature of this State at its next session.

The following are the commissioners appointed:

Joseph Blunt of New-York,	1st	district.
A. J. Downing of Orange co.,	2d	"
John P. Beekman, Columbia co.,	3d	"
Samuel Cheever, Saratoga co.,	4th	"
Edmund Kirby, Jefferson co.,	5th	"
Adrian Lott, Chenango co.,	6th	"
J. S. Wadsworth, Livingston co.,	7th	"
Wm. Risley, Chautauque co.,	8th	"

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New Hardy Plants.—Mr. Downing—The following plants recently introduced from China into the Horticultural Society's Gardens of London, have proven perfectly hardy with me the past severe winter:

Weigelia rosea, a strong growing shrub with a profusion of flowers in clusters of from 2 to 5, of a delicate blush colour changing to deep rose; plants from 6 inches high to 1¼ foot, stood out fully exposed in my nursery, without protection, and proves more hardy than Deutzia scabra or the common Althæa. It is also admirably adapted for forcing into bloom for bouquets.

Deutzia sanguinea—Perfectly hardy, but has not yet bloomed, even on the plants placed in artificial heat.

Anemone japonica—An herbaceous plant that blooms from September till severe frost, with rosey purple flowers about 2 inches in diameter, and is a great acquisition to a flower garden.

Forsythia viridissima will prove to be an evergreen in southern latitudes. It has not yet flowered, and proves to be about as hardy ap *Mahonia fasicularis*, and will be an ornamental evergreen south of Virginia.

The past winter has been the severest on evergreens that has occurred since 1832. Deodar Cedars have their tops very much injured; *Araucaria imbricata* will lose its leading shoot; *Euonymus japonica* has also been severely punished. The hedges have lost their foliage, but appear to be pushing out freely, and in a few weeks will be as green as ever. *Pinis Douglassii* I fear will be like the silver spruce, losing its leader every season. I have not tested *Cryptomeria japonica* out of doors, but do not doubt but that it is more hardy than Cedrus Deodora. *Yours, truly, R. Buist. Philadelphia, April* 14, 1849.

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Ornamental Trees in Villages.—The following effectual plan of ornamenting a village with shade trees, has been adopted by T. G. Yeomans, of Walworth, N. Y. During the past winter, Mr. Yeomans posted up conspicuously in the village, the following propositions signed by himself; and already several hundred trees have been planted, and several hundred more will probably seen be planted in pursuance of the bounty he offers:

"I hereby offer to any and every person who will plant out and properly protect shade trees in this village, in any of our streets, or in the Academy grounds or other public grounds, not more than one hundred rods from some one of the public buildings in the village, the premiums hereinafter named. The trees may be Maple, Elm, or any other equally hardy and ornamental sort; they must be made to grow three years after planting, and be at that time in a flourishing condition and not less than three inches in diameter, three feet above the ground; and not less than five so planted will be entitled to any premium; and this offer will not extend to trees planted more than two years from this date.

"1st. On all trees answering the foregoing description, I will pay *twenty-five cents each*. 2d. To any person so planting more than fifty and less than one hundred trees, I will pay twenty-five cents additional for each tree over fifty. 3d. To any person so planting one hundred or over, and not more than half of them on his own grounds, I will pay fifty cents for each tree. 4th. To any person planting thus the *greatest number* and not less than fifty, I will pay an additional premium of *twenty-five dollars. Dated Walworth, January* 29, 1849. *T. G. Yeomans.*"

The foregoing plan, which seems to operate so well here, would doubtless answer equally well in other places, and where a single individual cannot be found willing to incur the entire expense, several might join and as successfully accomplish the same end through their united efforts. Those persons who are usually most willing to incur expense for such a purpose are otherwise engaged, and through neglect or want of attention at the proper time, more than the want of means or willingness to expend their money for this object, the

season is passed over and the trees are not planted. But this plan gives the labor to those who need it, and the expense falls on those who are able and willing to bear it, while the inducement is sufficiently strong to give assurance that the work will be done in the best manner. *L. T. Walworth, April* 1849.

[We give our hearty commendation to efforts like the above, and should be glad to hear that individuals of sufficient taste and public spirit could be found in every village in the United States to induce those who have so little love of their own neighborhood or home as not to care to render it attractive, to do so from other motives, trusting to the certain influence of beautiful trees to work its own happy results in good time on the hearts of all those who live in the midst of them. Ed.]

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Overbearing of Dwarf Trees.—Having, like many others at this time, caught the tree fever, I am desirous of finding out the best remedies for the doubts and ills that beset me. So much has been said and written on the method of setting out trees, the preparation of borders, digging the holes, &c. &c., that upon this point there is no lack of information, nor much disagreement of opinion; we have sailing directions enough, and it is pretty well understood now that a tree must not be planted as though it was a post; but not so in regard to the management of the tree *after* it is set out. I know we often have dissertations upon the management of trees, but those I have read treat mostly of *pruning*, and upon this subject scarcely any two agree, and there seems to be no settled theory or practice.

I have particular reference now to the French, or Dwarf Pear trees, on Quince. Every one acquainted with these trees, knows that some kinds are inclined to come into early bearing, and it is an admitted fact that young trees suffered to bear a full crop, will receive a check to their growth, from which they rarely recover. Now what I desire to know is this: whether it is best to suffer such trees to flower, and then cut off the blossoms, or let them set their fruit and then pluck it off, whether the *whole* or *part*; or to nip off the fruit buds in March, and thus prevent altogether the flowering and formation of fruit? I have put these questions to some of my amateur friends, but without any philosophical answer; some say one way, some another; doubtless any way is better than to allow the tree to bear, (if growth is the object,) but I find no one who has made any experiments, and it seems desirable to find out and adopt the least exhausting process, and encourage the steady growth of the tree.

Of the kinds inclined to early bearing, the *Bartlett* and *Louise Bonne de Jersey* stand foremost. I have trees of the latter set out in '46, which bore full in '47, a fair crop in '48, and some fruit buds this year, but no growth, no new wood, and probably no more fruit after this year; and I doubt if thrifty trees can now be made of them. I am of opinion that this variety and most of the other varieties, should not be permitted to bear fruit till the 2d or 3d year.

I know, Mr. Editor, it is very hard to make new beginners pluck off the young fruit. I was myself told I should spoil my trees, but did not believe it, and I liked to see the fruit grow, but I have learned better now, and am desirous of further light from some of the more experienced tree growers. If sir, you can find leisure to answer my queries, either by letter or through your journal, you will much oblige your obedient servant, *W. R. Austin. Dorchester, Mass., April* 8, 1849.

[Removal of the fruit buds in the spring, before they open, is the best mode of throwing additional vigor into the growing buds. When young trees have been injured by premature overbearing, the wisest course is to shorten back the previous years' shoots to one bud. This, with the aid of a little animal manure, will cause the tree to push out vigorous shoots, and regain a luxuriant habit much more speedily than if the sap was forced to circulate through the contracted sap vessels of the last years' stinted growth. Ed.]

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Analysis of Soils.—All our readers, alive to the importance of a chemical knowledge of the soil they cultivate, will be glad to hear of a most laudable movement lately made by the *American Agricultural Association*, of New-York, to enable farmers and gardeners to learn with accuracy, and at a reasonable cost, the nature of the soils they cultivate.

The great cost of obtaining an accurate analysis of soils has, hitherto, prevented nine-tenths of the farming class from seeking this information,—important as it is to a systematic and intelligent improvement of the land.

By the following circular, which has been placed in our hands by one of the officers of the American Agricultural Association, it will be seen that an analysis may now be obtained, under their patronage, at a price so moderate that every cultivator can avail himself of the opportunity to ascertain the exact composition of his fields or garden:

"In order to afford to practical agriculture all the benefits which recent discoveries in chemistry and the collateral sciences are capable of yielding, the American Agricultural Association have established a *chemical laboratory*, in which the farming community can have samples of surface and subsoil analysed, together with manures, marls, gypsum, &c.; and that this institution may be made extensively available, the charges for analyses have been struck at the following low scale:

1.—Complete quantitative analysis of a soil, determination of all ingredients, and advice connected therewith,..... $5 00
2.—Approximate analysis of surface or subsoil, ... 1 00
3.—Analysis of bone dust, gypsum, &c., to determine the presence of one ingredient, ... 0 50

4.—Guano and other artificial manures, .. $1 00
5.—Correspondence (without analysis) on a particular subject,—to enclose, ... 1 00

"The above fees to accompany all samples, or communications.

"Commercial analyses, testing ores, minerals, drugs, &c., conducted in the laboratory with care.

"For analysis, 1 lb. of sub or surface soil should be collected from the average quality of the ground; all samples to be forwarded to Dr. ANTISELL, chemist to the association, at the laboratory, 140 Grand-st., corner of Elm-st., N. Y."

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SELECTION OF GOOD FRUITS.—We extract the following interesting remarks, on fruit culture and selection of varieties, by that experienced New-England cultivator, SAMUEL WALKER, Esq., of Roxbury, now President of the Massachusetts Horticultural Society, from the Report of the American Institute. ED.

In submitting the following list of the best American varieties of apples, pears, and plums in juxtaposition with the best European varieties, it is not my intention to make any invidious comparison; on trial,—the truth, the whole truth will be amply sufficient for any purpose. I shall, therefore, leave the result in the hands of the best judges—the cultivators—simply stating, that I shall select the best varieties from the catalogues of the New and the Old World.

APPLES.

American Varieties.	*European Varieties.*
1 Early Harvest,	1 Early Red Margaret,
2 Williams' Apple,	2 Red Astrachan,
3 Benoni,	3 Sops of Wine,
4 Porter,	4 Gravenstein,
5 Pomme de Neige,	5 Ross Nonpareil,
6 Baldwin,	6 Dutch Mignonne,
7 Yellow Belle Fleur,	7 Cornish Gilliflower,
8 Newtown Pippin, (green)	8 Ribston Pippin,
9 Rhode Island Greening,	9 Herefordshire Pearmain,
10 American Golden Russet.	10 English Golden Russet.

I will not carry out the comparison further, but submit a list of American varieties, all of which are deserving of extensive cultivation, viz:

Large Yellow Bough, Chandler, Fall Harvey, Jonathan, Minister, Hubbardston Nonsuch, Rambo, River, St. Lawrence, (Corse's) Northern Spy, Esopus Spitzenburgh, Summer Queen, and Ladies' Sweeting.

PEARS.

American Varieties.	*European Varieties.*
1 Bloodgood,	1 Citron des Carmes,
2 Dearborn's Seedling,	2 Passans du Portugal,
3 Pratt,	3 Williams' Bonchretien,
4 Knight's Seedling,	4 Flemish Beauty,
5 Tyson,	5 Rostiezer,
6 Seckel,	6 Fondante d'Automne,
7 Cushing,	7 Bezi de la Motte,
8 Heathcot,	8 Doyenne Blanc,
9 Andrews,	9 Louise Bonne de Jersey,
10 Buffum,	10 Doyenne Gris,
11 Dix,	11 Beurre Diel,
12 Lawrence,	12 Duchesse d'Angouleme,
13 Columbia.	13 Glout Morceau.

In addition to the above I will add a list of European varieties of great merit, viz:

Beurre d'Aremberg, Beurre d'Anjou, Beurre Bosc, Eyewood, Henry IV, Van Mons Leon Le Clerc, Marie Louise, Winter Nelis, Paradise d'-Automne, Passe Colmar, St. Ghislain, Vicar of Winkfield, Urbaniste, and Echasserie. For baking, Belmont, Black Worcester, Catillac, and Uvedale's St. Germain.

PLUMS.

American Varieties.	*European Varieties.*
1 Jefferson,	1 Green Gage,
2 Columbia,	2 Purple Gage,
3 Washington.	3 Coe's Golden Drop.

To this list of plums I will add the following American varieties as worthy of a place in every good collection, viz:

Purple Favorite, Huling's Superb, Imperial Gage, Lawrence Favorite, Bleecker's Gage, and Bingham.

CHERRIES.

The best varieties of American and European cherries are very dissimilar. I shall therefore submit a list of such varieties as I consider of the best quality, viz:

American Varieties. Sparhawk's Honey, Downer's Late, Sweet Montmorency, Manning's Mottled, Downing Red Cheek.

European Varieties. Black Eagle, Black Heart, Black Tartarian, Downton, Knight's Early Black, Bigarreau, Bigarreau Holland, Elton, Florence, Belle de Choisy, May Duke, and the Late Duke.

By the foregoing statement it will be perceived that among the well established apples and plums in this country, a majority are the product of America. Of pears and cherries, the greater number of choice kinds have been imported from Europe.

I will now proceed to the second part of my subject, and notwithstanding my esteemed friend, Thomas Bridgman, Esq., has with ability and good judgment brought the subject of seedlings under the notice of the managers, yet I shall not refrain to state all I intended to do before I received Dr. Bridgman's able report.

I am amare when a word of caution is to be spoken, or an error pointed out, that it should be done with candor and kindness; in that spirit the following remarks are submitted on

SEEDLING FRUITS.

My object is to point out an error, may I not rather say, a weakness, on the part of some cultivators of fruits, to overrate their own productions, more especially so when they raise a seedling apple, pear, plum, peach, or cherry, having any pretension to merit. If their production is of the best quality, and possesses but a single point of superiority, say only a shade of color, or a slight increase of size, in addition to the good qualities of the most choice variety of that class of fruit in the present catalogues, that alone will commend it to other persons, and they will mete out its praise in due season.

No seedling should be recommended for extensive cultivation until it shall have been proved to

be *superior in some respects* to the variety it most resembles. For instance, if any person shall raise a seedling plum one-fourth larger, and equal or superior in flavor, more beautiful in its appearance, and more productive than the Green Gage, then the new variety would soon find its way into every good collection of plums. The same remarks will apply to the Newtown Pippin apple. The person who shall be so fortunate as to raise a seedling apple of equal flavor, better color, and a tree more thrifty and productive than the green Newtown Pippin, will have accomplished something *worthy of record and a name*. But cultivators, like young fond mothers, are apt to consider their production to be a "none-such;" time, alas! often convinces them of their mistake; and when too late, they find they have only deceived themselves.

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Effects of the Winter on Plants.—In your March number you published a few remarks of mine on the experiments of Dr. Edmondson in acclimatizing the Camellia, in Maryland. I beg to inform you now of his success, through the last peculiar winter. The foliage of the exposed plants is more disfigured than in any previous season, owing, doubtless, to the extreme warm weather we had up to the 7th of January, which no doubt had started the sap. The sudden cold coming upon them in that state, (the thermometer falling as low as 4 degrees below zero, which 48 hours before had been ranging from 65 to 75 Fahrenheit, making a difference of many degrees.) This sudden check, I think, has been the sole cause of disfiguring the foliage, and many of the earliest flower buds. These Camellia plants are now in full bloom, but of course they are not in such perfection as last year. Many of the branches, however, which were covered with snow are not injured in the least. I noticed that one plant which was planted last November, in an open border where it was fully exposed to the hot sun, and had lost all its leaves, was opening its flowers; others again all destroyed. This has been with us an unusually severe winter on certain plants; of China roses, many varieties are killed to the ground, as well as that interesting Chinese shrub *Nandina domestica*. The wood of grape vines is, however, more perfect than I have found it for many seasons, owing to the fact that the wood was perfectly ripened in the autumn previous.

Cunninghamia lancifolia—a large plant, put out by Dr. Edmondson, has stood well; it was covered with a box, partially open to the north, and I think this tree may prove hardy here.

Koelrenteria paniculata.—This tree in the month of June forms a splendid ornament. Its spikes of rich yellow flowers, covering the tree all over, has a charming effect on a lawn or pleasure garden, in the fall, covered with rich mahogany colored seed pods. [This tree is perfectly hardy with us, and we have no doubt will be so as far north as Canada.—Ed.]

Lilium lancifolium album, speciosa, japonicum, and *longifolium*, are all perfectly hardy here—stood this last season here without any protection. The charming Double Japan Spiræa *S. prunifolia plena*, a plant 4 feet high, is now in full bud, and *what a treasure it is*. Siebold deserves a monument from the horticulturists for introducing this plant and the Japan Lilies, independent of the other fine things with which he has enriched our collections.

Photinia glabra and *serrulata* prove hardy, and are now opening their flower buds.

Paulownia Imperialis.—Last year the flowers were all destroyed owing to a warm period in February. This year they are not injured. This tree, now pretty well known in our nurseries as the Paulownia, has a character of its own, differing from that of any other tree I have yet seen, which I think will make every real lover of ornamental gardening admire it. It ought to be found in all well improved pleasure grounds, and it only needs to be planted on a spacious lawn, with a dark green at a distance for a back ground, to be seen to great advantage. It forms its large clusters of flower-buds in the month of August; and as every branch terminates with a paniele of large flower-buds, it is an interesting sight even during the fall and winter, though these buds do not expand till the succeeding spring. I have a cluster now before me, 13 inches long, containing 14 smaller branches, covered with flower buds, all of a very curious formation. The flowers when open resemble the *Maurandia Barclayana*, or the Purple Fox Glove. The seed pods are like those of *Yucca filamentosa*. The seed is flat and slightly winged. [This tree has withstood a temperature of 12 degrees below zero at the north the past winter without injury.—Ed.]

Your readers in the north, some of them, may think that the climate of Maryland is very favorable to gardening. In some respects it is so, but not in all. The *changes* of temperature are very great. During the past winter, in the latter part of February, the winter broke up, and all March was very wet and cold, so much so as to prevent any person from working the ground unless in dry soil. This month has been very dry and warm. Last night we had a strong frost with high wind; ice half an inch thick in tubs; the fruit of peaches, cherries, plums, and strawberries, or rather, such as were in bloom, are all destroyed. *Magnolia purpurea, Soulangiana, conspicua*, and some other varieties I have recently imported, were in their greatest splendor. Now all are destroyed. Yet the Camellia flowers, like those of *Pyrus japonica*, are not injured in the least. *Sam'l Feast. Baltimore, April* 16, 1849.

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Colossal Rhubarb.—*Dear Sir:* For a few years past, I have planted several varieties of rhubarb in my garden, and among others *Myatt's Victoria* and the *Colossal*. After a thorough trial in my soil, I find *Downing's Colossal* is decidedly

superior to any other I have yet tried, both as to size and flavor. I think the public generally are not aware of its value. It was originated in Newburgh, N. Y., some ten years since, by Chas. Downing, Esq. Respectfully, *Henry Little. Bangor, Maine, April* 3, 1849. [We believe every one who has tried this rhubarb will agree with Col. LITTLE, that no variety yet originated will compare in size, or quality, with the *Colossal*. Its stalks are remarkably tender and succulent. ED.]

....

FRUIT CULTURE AT THE SOUTH.—As your journal should be a record of all information upon the subject of horticulture, &c., I take the liberty of presenting to you some remarks that have appeared in the Southern Cultivator concerning fruits. I will add some views of mine, and attempt to be concise. A friend of mine writes that his want of success in fruits from the north, and, at the same time, his success with *creole* trees, induces a belief that imported trees will not do. A gentleman follows, and says he has tried all kinds of fruit trees; and that to succeed, we must rely upon native trees and selections. Many persons think that budded and grafted fruit will not succeed. Others think the fault is in pruning. Others, that cultivation will not do.

To all these I beg to reply. I have been a purchaser from time to time since 1832. I have budded, grafted, and layered. I dare not pretend to much knowledge; as in those matters, a long experience is required to give ordinary knowledge. But having tried all kinds of fruit trees, both foreign and native, both budded, grafted and seedlings, I trust I will not be deemed as being unwise if I give my opinions.

The past three years have been very unfavorable to fruit. More trees have been planted during this time than for any preceding ten or fifteen years, if we speak of improved fruits. I have seedlings, native varieties budded here; foreign varieties budded here; the same from the north; some pruned after your directions, others which a knife has never touched, and some pruned up to "bare poles,"—a stump five or six feet high before branching; some receiving a yearly culture, others occasional culture, others none at all. If the fault lay in the foreign, my seedlings and budded trees, from recent selections, should succeed; and so on, through all. But from some 1,000 or 1,200 peach trees, old enough to bear, I have not seen a peach per tree. I know of one orchard of budded and grafted fruit, that has succeeded fully except the past year. I have seen good seedling fruit, but there was no improved trees in those places to test. The question now follows, what is the cause? Is it owing to an overgrowth of tree or not? To want of the proper aliment?

I answer—it is owing to the *seasons*. And my reasons:

My orchards are upon good land—upon land similar in every respect to that which never failed up to 1846. The seasons have not been so remarkable for cold, as they have been for fluctuations,—from "quite warm for the season," to "this is regular wintry weather for our country."* In consequence, the fruit buds have been injured so much that the fruit either dropped before it became as large as a marble, or grew until near ripening, then rotted. The tree, not producing a crop, grew amazingly, and thus added to the difficulty. A portion of my land manured with 100 bushels of cotton seed per acre yearly; a portion not manured for eight years.

Northern pear trees grow exceedingly slow; and so do some that are grafted south. I have trees of my own grafting, not one year old this day, that are larger than the parent trees, planted out before grafting the above here. This is owing to injury sustained on the voyage, and their having been worked on sucker stocks.

To begin from native fruits, would be as *backward* a business as for me to throw away my axes, ploughs, chains, harrows, whiffletrees, hoes, &c., and begin a thousand years ago.

We must examine our land, our mode of culture, our location, and the peculiar seasons, before we rashly attempt to thrust aside all the labors of our forefathers.

I believe we will succeed, after a while; but I could not say the favorite fruits of your country will be the favorite here. I am yearly adding to my collection, and feel every confidence that in a few years I shall succeed. I have now about 160 varieties of the pear, 55 or 60 upon quince, and about 35 varieties of the plum. How many of all these will be worthless here, time alone will show. To get 20 or 30 really choice will be enough; but we must try, in this new country, until we prove; and I am perhaps as simple as any one who will "try."

I have grown here a few pears and plums that will compare favorably with any section; and as to peaches, I am sure, an Early Tillotson, Emperor of Russia, Early York, Lemon Cling, Bergen's Yellow, Smock Late, that I have grown here, cannot be excelled anywhere. I have purchased fruit for two years in the Philadelphia market even at 12½ cents each; and the unprejudiced visitor from the north has agreed, and will agree with me in the comparison I have made. I am faithfully yours, *M. W. Philips. Edwards, Mississippi, February*, 1849.

* Allow me to state, in a note, the changes here within ten days.

A week ago, the weather was so favorable that maple trees put out, in some favored spots, leaves large enough to show green. Althea had leaves about as large as a dime. I saw red oak blooms. Post oak had buds swollen as large as a marrow-fat pea. Corn and cotton had germinated in the field. On the morning of the 16th, thermometer was at 22°, on the 17th at 24°, on the 18th I did not look; but the earth has not thawed in the shade all day. Will this sudden change not destroy all fruit buds that have swollen so as to receive colour of bloom? Several apricots show a few full blooms; several peach trees, also. Strawberries show many blooms. The blue, porcelain blue, white, pink and red Hyacinths are in bloom. Jonquils, Narcissus, and grape Hyacinths, (blue bells,) are also in bloom.

Vine Borders.—A. J. Downing—*Dear Sir:* I have just read, in the April number of the Horticulturist, an article from Mr. Saunders, on the formation of vine borders, and am surprised to find he has aimed a shot or two at me. His batteries, however, are not in good position; for in one case his balls hit a third party, and in the other they take the same range as my own. My remarks, which it seems have drawn these from Mr. S., were contained in a review of Mr. Allen's work on vine culture; and it must be obvious to any reader that I was only endorsing his opinions, and, as I do not think he requires my aid to sustain his position, I shall offer no remarks on the subject which has so "perplexed" Mr. Saunders, but merely refer him to Mr. Allen's book, where he will find the whole subject fully discussed. If that fails to satisfy him, I may give some testimony from my own experience. So much for the first shot which hits Mr. Allen instead of me. The second is aimed at the theory of fresh animal matter for manures, which he asserts, with much earnestness, must prove fatal to the roots of vines whenever it comes in contact with them. As I made the same assertion, in the most unqualified manner, I am happy to receive this testimony in corroboration; and in return, I am glad to assure Mr. Saunders that I entirely agree with him as to the excellence of the materials he proposes for a vine border.

In conclusion, let me express the hope that Mr. S. will send a few bunches of such Black Hamburgh grapes as he describes—"well coloured, and weighing from four to six pounds each," to the next annual exhibition of the Pennsylvania or New-Jersey Horticultural Societies. I have been in the habit of attending them for years, and feel safe in assuring Mr. S. that such grapes would not only afford much gratification to horticulturists in this section, but would secure him a premium which would amply remunerate him. *A New-Jersey Subscriber. April 13th*, 1849.

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Gooseberry Culture.—*Dear Sir:* The great pleasure I have derived by the perusal of your excellent periodical, and the desire to communicate to others what has proved so satisfactory to myself, in my endeavors to "rescue from obloquy" one of the more humble fruits, has induced me to offer the following, which, if you think worthy of notice, you may place before your readers: Early in the spring of 1844, I purchased at auction a dozen bushes of the best English varieties of gooseberry, stated to have been imported by Kenrick. These were set out in good rich soil. I also transplanted to the same situation several larger bushes, of a small red variety, received from a friend a year or two before. In common with cultivators of this fruit, in my neighborhood, I was year after year doomed to disappointment in the fruit produced. Although, from the bushes of the smaller variety, last named, I annually raised a few very fair and fine flavored berries, the former yielded not an eatable fruit,—being, when about half grown, so covered with *mildew*, as is frequently the case in this climate, that a red variety could not be told from a white or green one.

Partly from information obtained from the Horticulturist and other sources, and partly from my own reflection, I was led to try early and close pruning, and the application of a mixture of unleached wood ashes and salt, to the surface under the bushes. Thus: about the 1st of March, and before the buds have much swollen, cut off the larger half, and in some cases two-thirds of the new growth, and when too thick, thin out some of the branches so as to give them handsome open heads. When the frost is fairly out, and the ground cleared off about the bushes, apply to each one quart of unleached wood ashes, and one table spoonful of coarse salt, well mixed; spread evenly on the ground under each bush, over a space of one foot or more in diameter, according to the size of the bushes. About midsummer, add half the quantity for renewal.

I claim nothing original in my experiment, but know that it has succeeded admirably the two last seasons,—affording me an abundance of fine fruit, entirely free from mildew, on all the bushes, which are of seven different varieties. My method of cultivation may not succeed in all situations and seasons; but if lovers of the gooseberry will try it, before discarding and throwing away their bushes, as some of my neighbors have done, I think they will be fully remunerated for their pains. *P. Salem, Mass., March* 3, 1849.

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Comparative Temperature—*Mr. Downing:* The following meteorological observations, for 1848, may be somewhat interesting, as affording some opportunity to compare the temperature of this with other localities. Latitude being the same, there are other causes to influence the temperature, such as altitude, the proximity of extensive forests, rivers or other large bodies of water,—all of which influence so materially the growth of vegetation, as to render comparisons of notes, taken in different parts of the country, interesting to those who are desirous of a more general knowledge of localities, remote from their own.

Our latitude is about 41° 40′,—very nearly the same as yours, at Newburgh.

January was a remarkably open month,—so mild as to appear more as March usually does. Roads were nearly settled on the 24th. Two inches of snow fell. Average temperature at 6 o'clock, morning, 24°; just before dark 27°. The highest temperature on the 26th; morning 45°, evening 49°. Lowest on the 10th; morning 8°, evening 9°.

February was also warm and very open, with but little rain. About two inches of snow fell. Average temperature, morning 22°, evening 28°. Highest temperature on the 20th; morning 41°, evening 37°.

March, before the middle, was cloudy and disa-

greeable; after that, pleasant. About three inches of snow fell. The ground was sufficiently settled on the 22d to plant trees. On the 28th, peach buds were considerably swollen, and grass appeared quite green. Average temperature, morning 25°, evening 33°. Highest temperature was on the 30th; morning 36°, evening 65°. Lowest on the 4th; morning 0, evening 22°.

April was a cold and backward month. There were nine frosty nights. More snow fell on the 18th than at any one time during the winter. On the *19th, mercury was at* 31° *in the shade at noon.* Peach blossoms (early kinds) nearly all destroyed. Cherry blossoms nearly half destroyed. Average temperature, morning 28°, evening 47°. Highest temperature on the 30th; morning 35°, evening 65°. Lowest on the 19th; morning 22°, evening 38°.

May was a warm, wet and growing month. On the 5th there was a severe hail storm. On the 6th, apple blossoms were fully expanded, aspens were nearly in full leaf, and grape-leaves coming out. Early scarlet strawberries—a small portion—ripe on the 31st. Average temperature, morning 51°, evening 61°. Highest temperature on the 29th; morning 67°, evening 64°. Lowest on the 14th; morning 32°, evening 54°.

June, until the 15th, was somewhat dry. After that time showers were abundant. On the 4th, George the Fourth and Cabbage roses, fully expanded. On the 17th, "American Red" raspberries fit to eat. On the 24th, common red cherry ripe. Average temperature, morning 55°, evening 64. Highest on the 27th; morning 65°, evening 87°. Lowest on the 9th; morning 41°, evening 62°.

July was an extraordinarily wet month. There were 14 days in which more or less rain fell; the whole quantity was but little short of 12 inches. Grass and hay rotted in the field, and ripe wheat sprouted badly in the head. Average temperature, morning 58°, evening 66°. Lowest temperature on the 4th; morning 50°, evening 55°. Highest on the 27th; morning 67°, evening 68°.

August. The first part of the month somewhat wet. The week commencing on the 9th, and ending on the 16th, was the warmest week of the summer. Average temperature, morning 58°, evening 70°. The highest temperature was on the 15th; morning 69°, evening 79°. Lowest on the 7th; morning 50°, evening 62°.

September was cool and pleasant. The first frost was on the 22d, but very slight, as were all succeeding it this month. Average temperature, morning 44°, evening 54°. Highest temperature was on the 4th; morning 55°, evening 71°. Lowest on the 28th; morning 30°, evening 44°.

October was, on the whole, quite pleasant. Indian summer commenced on the 5th, and continued 10 days. Frosts were all light. Average temperature, morning 38°, evening 49°. Highest temperature on the 16th; morning 58°, evening 54°. Lowest on the 18th; morning 25°, evening 34°.

November was more unpleasant than usual here. There was not one fine day previous to the 17th. The first snow fell on the 8th, to the depth of two inches. Temperature through the month was much lower than usual. Average temperature, morning 23°, evening 34°. Highest temperature on the 29th; morning 44°, evening 40°. Lowest on the 9th; morning 10°, evening 24°.

December. The temperature through this month was quite equable and agreeable. Commenced snowing on the night of the 20th, and continued until morning of the 22d,—depth 20 inches; an unusual quantity here. On the 27th there was a fall of 3 inches more. Average temperature, morning 25°, evening 30°. Highest temperature was on the 19th; morning 52°, evening 36°. Lowest on the 13th; morning 13°, evening 34°.

The lowest degree of cold during the year was on the 4th of March, when the thermometer stood at zero at 6, A. M. The warmest day in the year was the 4th of August,—thermometer 90° at 12, M.

The growing season was remarkably favorable for luxuriance of vegetation, and cultivators were taxed severely to keep under the many trespassers which frequent and copious showers threw in the way.

The amount of rain during the year did not vary much from 55 inches; and nearly twice the quantity fell in July of any other month.

The following table, made by Geo. Duffield, of Detroit, shows the total of rain which fell in each of the eight years preceding 1848. It would not vary much from one made for this locality:

Total of rain in	1847, was.....	37.674
do	1846, do	53.334
do	1845, do	33.411
do	1844, do	45.654
do	1843, do	37.920
do	1842, do	40.089
do	1841, do	33.907
do	1840, do	36.842

Yours respectfully, *W. H. Scott. Toledo, Ohio, February, 20th,* 1849.

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To Destroy Moles.—*Dear Sir:* At your recommendation I obtained, last spring, in Philadelphia, a lot of Osage Orange plants for hedging. The ground was good and well prepared,—the plants carefully hoed and cultivated through the season. They made a fine growth and looked flourishing; but when I came to examine them this spring, I found that, in some places, the *moles* had destroyed nearly all the plants, by eating off the bark below the surface of the ground. Some of the plants they cut entirely off, and even followed up the small roots and eat them. The work of destruction they seem to have accomplished last fall, after we ceased to cultivate them, and the plants had stopped growing. If you, or some of your numerous corres-

pondents, cannot communicate something for our relief in this case, I am afraid we shall be under the necessity of abandoning the cultivation of the Osage Orange as a hedge plant, from this cause alone. We have some fine hedges of the Cock-spur or New-Castle thorn; but their growth is slow, and the haws or seeds vegetate with difficulty. If we had some remedy for the moles, I am confident the Osage Orange would make a fence in one-half the time. I have never found the roots of any other plant so much eat by the moles as I have found my Osage Orange. I see it stated in an old vol. of the *American Farmer*, that ground planted with the Castor Oil Bean was avoided by moles.* Yours, *John Dickie. New-Castle co., Del., April* 15, 1849.

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Specific Food for the Grape—*A. J. Downing, Esq:* In the "Living Age," p. 246, the Paris correspondent mentions, among the reports of the Academy of Sciences, one from M. Persoz, relating a new method of cultivating the vine, by applying at one vine a particular manure, to increase the growth of the wood; and at another time, "substances which serve exclusively for the development of the fruit." The correspondent does not state the substances M. Persoz recommends. And it has occurred to me that, from among your numerous means for information, you might obtain the report, and lay its substance before the readers of the "Horticulturist." With much respect, *Geo. N. Chapin. Providence, February*, 1849.

☞ See article in a preceding page of this number, on the culture of the grape.

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Visits to Gardens.—Having this day visited some horticultural establishments, in the vicinity of New-York, it has occurred to me that some rough notes respecting them might be interesting for the readers of the Horticulturist.

I first call attention to Mr. Thorburn's collection, at Astoria, Long-Island; Mr. T. having kindly shown me everything new and rare, showy and interesting, in his houses. Entering a long range of glass, the first thing to attract attention is a beautiful collection of roses, intermingled with Rhododendrons and other evergreen shrubs, among which I noticed a fine specimen of Norfolk Island pine, (*Eutassa excelsa,*) about fifteen feet high. Adjacent to it is a beautiful specimen of *Cycas revoluta*, a palm-like plant, held in high estimation by the Japanese. The Japan soldiers are said to exist a long time on a small quantity of the Sago, procured from the cellular substance occupying the centre of their stems, and is so highly esteemed that it is contrary to the laws of Japan to take any of the trees out of the country. Mr. Thorburn seems to have more than ordinary veneration for his specimen, I suppose from the fact, (as he informed me,) that it once belonged to General Washington. There is, also, in the same house, the finest specimen of *Metrosideros lanceolata* that I ever beheld, bearing numberless heads of flowers in every state of development. On the front shelf, in an adjoining stove, is a handsome plant of *Nepenthes distillatoria*, trained to stakes, and several small pots of *Begonia hydrocotilifolia, Begonia manicata, Bilbergias*, and the curious *Dionœa muscipula* placed round it, all mantled with the pretty trailing mosses, *Lycopodium stoloniferum*, and *Lycopodium cæsium*, so as to hide the pots entirely from view,—the whole having the effect of a miniature rockwork, carpeted with the loveliest green. I also observed two good specimens of *Cereus senilis*, commonly called the "Old Man's Cactus," from its shaggy gray hair-like spines, resembling an old man's beard. In the third division are large and handsome specimens of the genus Camellia; a genus whose dark green foliage, and the splendor of their blossoms, make them desirable in every collection. Among the many fine specimens here, was a handsome plant of the weeping pine of New-Zealand, (*Dacrydium cupressinum,*) several feet high. In the fourth and last division are Camellias, and other tender plants, of various sizes from the grafts; and this department seems to be exclusively devoted to propagating.

To the left is the new "Rose-house," mentioned in a former number of the Horticulturist. The plants are clean and in good order, with, at the present moment, a tolerable bloom. I here observed a large plant of *Strelitzia regina*, bearing several stems of beautiful orange coloured flowers. To the right and left of the door is several plants of the well known *Richardia africana*, with its snow-white spatho and golden spadix, looking very handsome at this season, when the majority of plants are done blooming. On the pit wall was a pot of *Lobelia belladifolia*, with its light blue flowers hanging gracefully to the ground.

Exclusive of the plants here enumerated, there are several splendid and different coloured Azaleas, Rhododendrons, &c., intermixed with the other plants. As a whole, I found here a floral display and richness of foliage that do the establishment much credit. The stock of young plants is large and thrifty, mostly of the newest and rarest kinds. In front of the green-houses is a good specimen of *Magnolia conspicua;* and not-

* We imagine that moles will only be found troublesome to hedges in very light sandy soil, where they can easily burrow.

We agree with our correspondent, that if they are, as he thinks, especially fond of the Osage Orange, some remedy must be found, in districts infested with this creature. We find the following recipe for destroying them, strongly recommended in a little work, entitled "Pests of the Farm," lately published in London:

"Take a quantity of fresh worms, put them in a wooden box with a small quantity of *carbonate of barytes* in powder, and let them remain for an hour or two; then find out the runs, where the moles leave the fences for the land; lay in every run five or six worms, and continue doing so as long as the worms are taken away by the moles. I was infested by moles before I used this remedy, which was about fifteen years since, but have never been injured since, by giving a little attention to them in the spring." Ed.

withstanding the severity of the winter, its flowers will be expanded in a day or two. I first thought it had been covered during the severe frost; but upon inquiry, Mr. THORBURN informed me of the contrary. Being a stranger, Mr. T. asked me if I ever saw so fine a specimen of this Magnolia. He seemed not a little surprised on my remarking that I had seen one double its size in the grounds of the editor of the Horticulturist, at Newburgh. From this, I conjecture that large specimen plants of this Magnolia are rather scarce.

I next refer to the collection of A. P. CUMMINGS, Esq., at Williamsburgh, N. Y., who was equally courteous in showing me everything interesting in his well stocked houses; among which I noticed several fine Azaleas, Camellias and Rhododendrons. Good specimens of *Araucaria braziliensis*, and *Eutassa* (*Araucaria*,) *excelsa*; also, a good specimen of *Casuarina equisetifolia*, a curious plant, native of Australia, and known to the aborigines by the peculiar name of "Beefwood." A *Banksia serrata*, several *Acacias*, and many flowering plants of *Chorizema varium*, *polygallas*, and *Echeveria grandiflora*. Good flowering plants of *Burchellia capensis*, and a pretty Aristilochia. A good plant of *Ardesia crenulata*, about 2½ feet high. The contrast of its scarlet fruit with the dark green crenate foliage, had a pleasing effect. Among other novelties in this gentleman's collection, I saw good plants of the *double* purple and white Chinese Primrose,—varieties yet little known; the purple being seldom seen, even in Britain, the emporium of horticulture.

I must now conclude this little excursion, with alluding to a private collection, already noticed in the Horticulturist, but which cannot be too often cited as a model of good cultivation. I mean Mr. BECAR'S unrivalled Camellias, which is indeed a grand one. Several of the varieties were still in bloom. His Azaleas have far surpassed any I had seen. Some of them are so loaded with flowers that scarcely a bit of their foliage could be seen. His collection of Calceolarias is large and healthy. Few of them are yet in flower, as a matter of course; but those which I saw in bloom were excellent sorts. I saw, also, in his collection a good plant of the pretty *Kennedia Maryata*. I am, sir, respectfully yours, *M. C. Newburgh, April* 6, 1849.

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FLORISTS' FLOWERS.—*Dear Sir:* I have been an attentive reader of the Horticulturist from its commencement, and have been much pleased with the several numbers as they have appeared. I was much interested in reading the treatises on the culture of the Geranium, Carnation and Pansy, and have been expecting to see other treatises occasionally appearing, such, for instance, as those on the culture of the Calceolaria, Fuchsia, Azalea indica, Ranunculus, Anemone, Picotee, Rose, Hyacinth, Tulip, Auricula, Polyanthus, &c. Such popular treatises would no doubt be read with much interest by your readers generally. I hope you will favor your readers occasionally with one of them. By no one will they be perused with greater interest than by your obedient servant, *Wm. Lunn. Montreal, March* 26, 1849.

[We look to the several eminent florists among our readers to meet the wishes of our Canada subscriber. ED.]

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EFFECTS OF THE LATE WINTER.—Neither the Red nor Yellow Antwerp, the Franconia nor Fastolff raspberries will stand the winters with us; even the spurious Antwerp is sometimes injured. I find some of my young cherry trees injured this spring, especially the Elton, Downton, B. Tartarian, and Bigarreau. The Belle de Choisy appears as hardy as the Mayduke and pie cherry; they are affected on the south or southeast side of the tree, near the surface of the ground, in the form of a small brown patch, as if they had been scorched by fire. Would not grafting or budding strandard high on the common Mazzard or Morello cherry prevent this, in a measure? The varieties that I alluded to as having suffered were budded quite low down. The Ross Phenix strawberry is an entire failure with us; it will not withstand our hot and dry summers. [It succeeds best at the north, and in a cool moist soil. ED.] The peach crop will be very short with us this season.

If you shall deem my communication worthy of notice, I may trouble you again. Yours, respectfully, *John Diehe. New-Castle co., Del.*

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MAGNOLIA GRANDIFLORA.—In the Horticulturist for February last, (p. 375,) one of your correspondents, writing from Philadelphia, says—"*Magnolia grandiflora*, and many other evergreens of the southern states, grow well in Britain, yet they are tender and by no means hardy in the middle states." This might discourage some of your readers here; and as this grand tree is my especial favorite, and worthy of all care and attention, *at any cost*, for a good specimen tolerably grown is well worth one hundred dollars to any residence, permit me to state the following facts:

There are two specimens averaging twenty-five or thirty feet high, and of magnificent foliage, on the farm of OWEN SHERIDAN, ten miles north of Philadelphia, which flourish and flower *superbly* (the word superb is weak in conveying my meaning,) every season, and are the source of admiration to numerous visitors; while the flowers are plucked by baskets-full for the gratification of friends.

There was a similar specimen at the Landreth nurseries some years ago, *which perfected its seeds*, and some of its beautiful descendants are now flourishing in my possession in the open air. Unfortunately, it was not planted in a suitable soil, and was blown over by a gale and died. I have myself a specimen, removed from a Philadelphia garden, that is fifteen feet high; though it lost its top by the process, it has recovered its

vigor, and has bloomed since perfectly. There was too, till lately, a specimen at the Hamilton estate, below Philadelphia, planted by PURSH, Mr. H.s' gardener, which did well, till the place was neglected and went down, when some animal rubbed and partially injured it. There are many others smaller than the foregoing, bearing the present hard winter perfectly, as far as I yet perceive; and I mention them in the hope that no planter hereabout will neglect to procure one or two specimens, at whatever cost. Nothing that I know of could tend to make his heirs, if they have any rural appreciation themselves, so proud of their ancesters, as a good *Magnolia grandifolia*, a *Deodora*, and a *Cedar of Lebanon*.

The present is the season for removing trees, and getting together the variety, without which, planting is little less than useless. Young planters should not be discouraged because they cannot get together, in one season, all that they may want. Collecting even a moderate variety, in this country, is about as discouraging at first as forming a collection of coins or autographs. Good specimens of the most valuable trees are very scarce. For the best kinds there is little or no demand, because the mass of the people have not learned their names, or their value; consequently, the gardeners raise only the rapid growing and *rapid selling*. This is somewhat modified of late, and specimens are coming forward; but it is discouraging, when one wants a Deodora Cedar, to find only small plants of one foot high. I know of none others for sale. Let those who would benefit posterity plant these, however, and for immediate effect put in bushes, such as the filbert, the mist tree (or Venetian Sumac,) &c. &c. Filberts are excellent to hide a boundary, or to close the vista of a walk; and, moreover, produce really valuable fruit.

One of my favorite trees is the Siberian crab apple, which bears abundantly, and is very ornamental when loaded down with its delicate fruit, from which, too, may be prepared one of the most agreeable winter preserves. By no means forget the native holly, all the hardy Rhododendrons, the climbing plants named in the February Horticulturist, and especially the *Irish* ivy, which will make six or seven feet growth the first year, if well rooted when it is set out. The Irish ivy alone is worth cultivation to those who wish rapid results; and unfortunately it is not always to be had. I have rooted one thousand plants in a green-house this winter, and distributed them wherever my neighbors have the good taste to apply for them. But many persons *will not* appreciate the beautiful in nature; and one, otherwise well informed individual, has just said he had plenty of ivy, but did not know if it was evergreen or not! LOUDON says there is a species of yellow ivy which, if planted with the green, would entwine among it, and appear at a little distance like flowers. See, in his *Arboretum Brittanicum*, the article on "Ivy," some extracts from which it would be appropriate to publish in the Horticulturist. My pen would never tire of these themes; but your columns are too valuable for long communications. Yours, *J. J. S., Philadelphia, March* 5, 1849.

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ANSWERS TO CORRESPONDENTS.

EVERGREENS.—*B. Thompson*, (New-York.) These may be planted till the young shoots are grown from half an inch to an inch long. Although it is somewhat opposed to theory, yet many of the most successful planters in this climate prefer to wait in the spring till the buds are swollen, and the young shoots begin to put out. Choose a moist day, keep the roots wet, and preserve some earth about them whenever it is possible, and you will find no difficulty in removing evergreens.—*W. W.*, (Baltimore.) As *Pinus cephalonica* has proved hardy in our grounds, there is no doubt of its doing well with you.—*An Amateur*, (Trenton, N. J.) The Deodar cedar is hardier than the Cedar of Lebanon, and will bear a temperature of 12 degrees below 0 of Fah. without injury.

ANNUAL VINES.—*A Lady*, (New Haven.) The best and most rapid growivg vines for your purpose, are *Cobea scandens*, (blue bell-shaped flowers.) *Pergularia odoratissima*, (white flowers,) *Tropeolum canariense*, (yellow flowers,) *Maurandia Barclayana*, (purple,) and *M. lophospermum*, (pink flowers.) All these can be had in pots, of any of the leading florists. Turn them out in a rich border, and they will climb from 10 to 20 feet, and flower all the season. Among the annuals, the Cyprus vine, Scarlet and Morning glory, Orange Loasa, and Balsam pear are the best vines. Sow the seeds any time this month—the sooner the better.

FLORISTS' FLOWERS.—*A Tyro*, (New Bedford.) If you use chopped turf from an old pasture for the *basis* of your compost, enrich it with manure from an old hot-bed, and lighten it with silver sand, you will succeed so far as the soil is concerned.—*R. B. W.*, (Philadelphia.) Ranunculuses must not be planted in an open border, as they will not bear our blazing summer sun. They also want a cool, deep, rather moist, but well-drained site, and are, on the whole, by no means easy of culture in the United States, though we occasionally see very beautiful small collections.

BULBS.—*I. C. W.*, (Weverton, Md.) Prepare a border for the hardy bulbs which do not succeed with you, by throwing out all the soil 20 inches deep, rejecting your clay subsoil, and filling up 8 inches deep with small stones. On the top of this place a foot of good, light, rich soil, in which plant the bulbs. The Double Narcissus needs an open exposure, so that the leaves may grow large, and mature fully; it will then bloom abundantly.

DRYING FRUITS.—*W. S. Matthews*, (Canton, Ala.) The flue in the German apparatus for drying prunes, is of the thickness of a common brick. This flue passes through the middle of the

oven, the compartments for drying the fruit being on each side. The trays slide on wooden bearers.

LAYING OUT GROUNDS.—*A New-York Subscriber.* If you will send us your address we will furnish you with the information you wish.

DISEASES OF FRUIT TREES.—*R. M.*, (Brooklyn.) Your cherry trees are *hide-bound*. Read Prof. TURNER'S article published in a late number; strip off the outer bark and the trees will recover. We have found the plum tree knots curable on large limbs by cutting out the affected part, and washing the wound over with a weak copperas water—half an oz. to two quarts of water.—*A Constant Reader*, (Northampton, Mass.) Your peach trees have the *yellows*, for which as yet no remedy has been discovered. Dig them up and burn them, root and branch. Pruning a healthy peach tree after cutting a branch from one affected by this disease, will communicate it to the healthy one. Procure a fresh stock from some nursery where the disease is unknown—as it is in many places.—*A. B.*, (Orange Co.) Your old pear trees have stopped bearing because they have completely exhausted the soil. Dig a trench 3 feet wide and 18 inches deep, all round the tree, at a distance of five feet from the trunk; cart away the old soil, and fill up the trench with a mixture of sods, leached ashes, and bone-dust—using one bushel of the latter and six bushels of the former. It will speedily recover and bear good fruit again.

STRAWBERRIES.—*A Jerseyman.* The *Large Early Scarlet* is a sort that never fails to bear a good crop alone by itself, having an abundance of both pistils and stamens in the blossoms. *Burr's New Pine* is the best American Seedling variety that we have yet tasted. There are few more productive sorts for market than the *Hudson. Trench the soil two feet deep*, and bury your fresh manure deeply, and you will find no difficulty in getting good crops. The Hudson being a pistillate sort, a bed of the Large Early Scarlet or some other *staminate* variety should be planted near it to insure a crop. One-fourth staminate plants is a sufficiently large proportion.—"*Buffalo.*" Keen's Seedling is worthless for general cultivation in this country, as the plants burn up in summer, and "freeze out" in winter. *Black Prince* is the best substitute for it in this climate.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting of this society occurred on Tuesday evening, April 17, 1849,—the President in the chair.

On this occasion, the display was surpassingly fine. The great variety, number, and beauty of the specimens of plants, in full bloom, was the theme of the numerous visitors. The contributors of the designs of cut flowers, baskets and bouquets, evinced good taste and judgment. Of rarities among the fruits, were apricots, grapes, just taken from the vine, strawberries and barbadoes gooseberries; also, a number of seedling apples from various sources.

The premiums awarded were as follows:

By the Committee on Plants and Flowers.—For the best ten varieties of Pelargoniums, to Robert Buist; for the second best ten, to Ben Daniels, gardener to Caleb Cope. For the best ten everblooming roses, named varieties in pots, to John Sherwood. For the best six named varieties of Hyacinths, to Robert Buist; for the second best six, to Ben Daniels. For the best six varieties of Pansies, to Robert Kilvington; for the second best six, to Jas. Powell. For the best three named varieties of hot-house plants, in pots, to James Bissett, gardener to James Dundas; for the second best three, to the same. For the best three named varieties of green-house plants, in pots, to Robert Buist; for the second best three to Ben Daniels. For the most interesting collection of named plants, in pots, to Maurice Finn, gardener to John Lambert; for the second best collection, to James Bisset, gardener to Jas. Dundas; for the third best, to Ben Daniels. For the best display of indigenous plants, in pots, to Robert Kilvington. For the best design of cut flowers, to Ben Daniels; for the second best, to James Bisset, jun., gardener to Joseph Ripka. For the best basket of cut flowers, to Maurice Finn; for the second best, to Ben Daniels.

The committee awarded a special premium of one dollar, for a fine basket of cut flowers, to Peter Raabe; and took much pleasure in calling the attention of the society to some beautiful specimens of the Souvenir de Malmaison Rose, from the garden of Jos. Ripka, Manayunk; and also to a very beautiful specimen of Camellia japonica, var. Prattii, from the collection of James Ritchie.

The Committee on Fruits beg leave to report, that they have noticed, with pleasure, many specimens of seedling apples:

No. 1. A large red apple, which they consider a good sprightly apple, and worthy of cultivation; from Mr. Howard, Delaware county, Pa.

No. 2. "Fallen Walder," beautiful specimens, but dry; from Dr. Kittoe, Muncy, Pa.

No. 3. "Spring Pippin," second quality; from H. N. Johnson, Germantown.

No. 4. "Brandywine Pippin," good, and worthy of further trial; from John Lodge, near Wilmington, Del.

No. 5. "Major," of second quality; from Dr. Kittoe.

No. 6. "Water-melon," Montgomery county, wants character; deposited by A. W. Corson.

No. 7. Worthless; from Wilmington, Del.

The committee also noticed a dish of excellent strawberries, Breda apricots, grapes, and the fruit of the Cereus Mallisoni.

The Committee on Vegetables report, that they have awarded the following: For the best cucumbers, to Ben Daniels, gardener to C. Cope; for the second best, to Patrick Devine, gardener to Sam'l C. Ford. For the best cauliflowers, to James Leddy, gardener to Pierce Butler. For the best seakale, to Ben Daniels. For the best rhubarb, to Anthony Felten; for the second best, to Ben Daniels. For the best asparagus, to Isaac B. Baxter; for the second best, to Ben Daniels. For the best display, and for the second best display, by market gardeners, to Anthony Felten. For the best display, by amateurs, to Ben Daniels; for the second best, to Wm. Johns; for the third best, to Maurice Finn, gardener to John Lambert. The committee noticed four heads of very fine lettuce, by Pierce Butler's gardener.

A communication from JAMES RITCHIE was read, stating his success with a new remedy in destroying mildew, which is a weak solution of tobacco, syringing plants affected

therewith, and afterwards using pure water to remove the tobacco solution. Two applications effectually destroyed the mildew on plants affected with him.

Members Elected.—Messrs. Harry Ingersoll. H. W. Cleveland, Robert Forsyth, P. B. Mingle, James Redings, and John Kinnier.

Objects Exhibited—*Plants.*—By Ben Daniels, gardener to Caleb Cope, New Fuchsias, Exquisita, and Sir Henry Pottinger; new Pelargoniums, Pearl's Pompey, Rachel, Excelsa, Duchess of Saxe, sanguinarium, Beauty Supreme, and a table of standard varieties; also, Spiræa lanceolata, Bilbergia, from Mexico, Rondeletia speciosa, Pedilanthus carinatus, Euphorbia tetragona, E. horrida, Maxillaria crispa, Æschyzanthus parasiticus, Mammillaria Wildiana, Calcolaria meteor, Mahunia odorata, Rhododendrum Cunninghami, a new white variety, Camellias, Primulæ sinensis, Azalea sinensis, seedling Cinerarias and Petunias.

By Robert Buist, Robert Scott, foreman, Azalea variegata, Cytisus racemosus. Fuchsia coronet, Pelargonia of varieties, Symmetry, Orion, Hebe, Rosy Circle. Blood Royal, Mrs. Smith, Helen Buist, Flash, Gauntlet, Emma Louisa. Witch, Vesta, Rosetta, Nonsuch, Conflagration, Gigantea, Life-guardsman, Margaret, Anais Lannoxii, and a dozen Hyacinths.

By David Scott, gardener to Fred'k Lennig, Clivea nobilis, Spiræa lancifolia, Tritonia sp., Azalea coccinea, Camellia japonica, var. candidissima, Coreus Jenkinsonii, Cineraria Queen, Gloxinia speciosa cœlestina, G. maxima delicata, G. Menziesii, G. caulescens, and *new* G. Fifiana, G. Teichlerii, G. alba sanguinea, and five seedlings.

By James Bisset, gardener to James Dundas, a table of Pelargonia,—very fine specimens of green-house and hot-house plants.

By Maurice Finn, gardener to John Lambert, a large collection of select green and hot-house plants.

By P. Raabe, fine Camel's, Azaleas, Hyacinths, Roses, etc.

By John Sherwood, Roses of varieties,—Commandant, Fourier, Baron Prevost, Abbe Mioland, Madame Lafay, Corronne de Purple, La Gracious, Bouquet de Flora, Melanie Cornu, Wm. Jess, and Celina.

By James McDonald, gardener to Miss Gratz, a table of beautiful Pelargonia, &c.

By Robert Kilvington, indigenous plants,—Drosera filiformis, Schizæa pusila, Caulophyllum thalutroides, Hepaticatriloba, Anemone, Ferns, etc. etc. and Pansies.

By James Powell, choice Pansies.

By Wm. Rottanbury, beautiful Pansies.

Designs and Bouquets.—By Ben Daniels, a design in form of an open temple, and beautiful basket of cut flowers.

By James Bisset, a large cone bouquet.

By James Bisset, jr., gardener to Jos. Ripka, a cone bouquet.

By Maurice Finn, a handsome basket of cut flowers.

By Peter Raabe, a neat basket of cut flowers.

By Robert Kilvington, hand bouquets.

Fruit.—By Ben Daniels, gardener to Caleb Cope, strawberries, var. Hovey's and Keene's Seedlings, Myatt's Eliza, and La Fayette Hautboy; grapes—White Sweetwater, and Rose Chasselas, and Breda apricots.

By John R. Brinckle, Barbadoes gooseberries,—the fruit of Cereus Mallisoni.

By John Perkins, apples,—several varieties.

Seedling Apples.—By Mr. Howard, Delaware county; Dr. Kittoe, Lycoming county; John Lodge, Del.; A. W. Corson, Montgomery county; Dr. Thomson, Wilmington; and H. N. Johnson, Germantown.

Vegetables.—By Ben Daniels, gardener to C. Cope, cucumbers,—Marshall's Seedling,—23 inches long, Prince Albert peas, mushrooms, three var. of peppers, lettuce, rhubarb, sea-kale, kidney beans, spinach, asparagus, radishes, potatoes; all out same day.

By Anthony Felten, a great variety of fine specimens.

By Wm. Johns, lettuce, radishes, etc.

By Isaac B. Baxter, asparagus, etc.

By James Leddy, gardener to Pierce Butler, cauliflowers and lettuce.

By James McDonald, gardener to Miss Gratz, lettuce and cucumbers.

By Patrick Devine, gardener to S. C. Ford, cucumbers.

By Maurice Finn, gardener to J. Lambert, a small collection.

Thos. P. James,
Rec. Secretary.

MASSACHUSETTS HORTICULTURAL SOCIETY.

BUSINESS MEETINGS.

March 31, 1849.—President Samuel Walker in the chair.

The Committee on Flowers recommended that a semi-annual exhibition of the society be held in June, commencing on the 19th, and terminating on the 23d; and it was voted to place $50 at their disposal, to be awarded in premiums at said exhibition.

Voted, That a committee of three be appointed by the chair, to take into consideration the expediency of awarding to J. F. Allen, Esq., of Salem, a testimonial of their approbation and thanks, for his valuable contributions of green-house fruits, during their exhibitions of past seasons; and Messrs. I. S. Cabot, Cheever Newhall, and Eben'r Wight, were appointed that committee.

A letter was received from S. P. Hildreth, Esq., of Marietta, Ohio, accompanied with a painting of several of the native fruits of that part of the country; and the thanks of the society were voted to Mr. Hildreth, and his communication ordered to be printed in Hovey's Magazine.

Alvah Kittredge of Roxbury, and E. E. Rice of Boston, were elected members of the society.

April 7th—President Samuel Walker in the chair.

Voted, That the thanks of the society be presented to W. C. Brinckle, M. D., of Philadelphia, for his generous contribution of scions of rare fruits; also, to A. H. Ernst, Esq., of Cincinnati, Ohio, for scions of new and rare fruit.

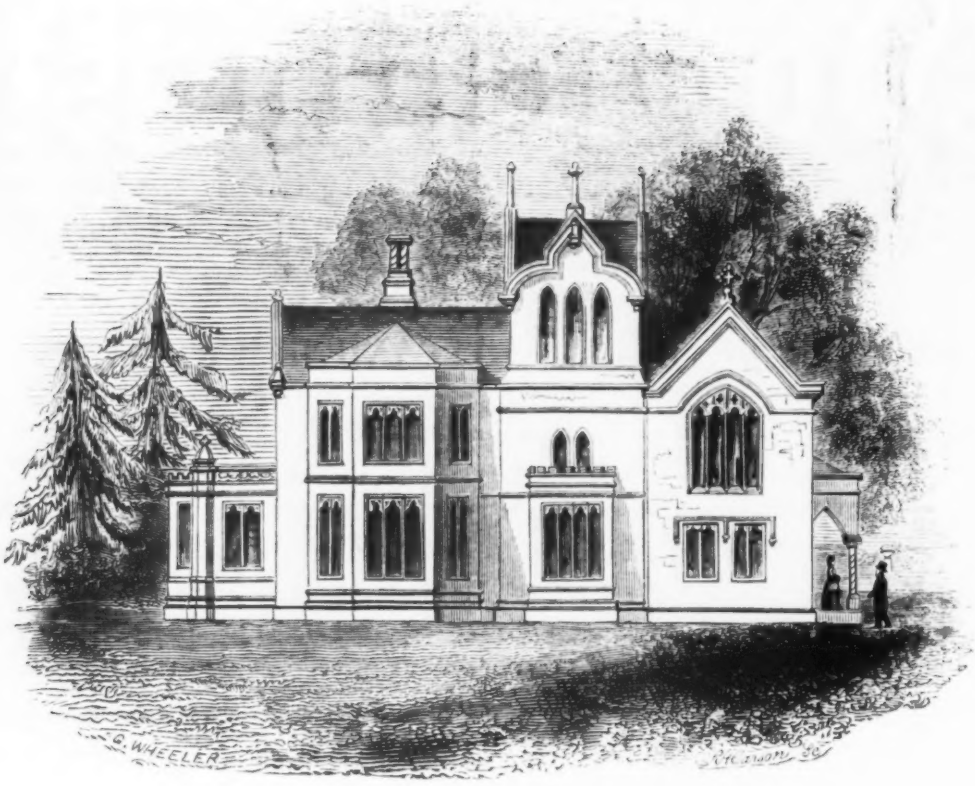
Voted, That the thanks of the society be presented by the Corresponding Secretary, in a complimentary letter, to Silas Durkee, M. D., of Boston, for his contribution of beautiful specimens of Prairie grass, for the use of the society.

On recommendation of the committee, appointed for that purpose, it was voted, that a piece of plate, of the value of $25, be presented by the society to J. F. Allen, Esq., of Salem.

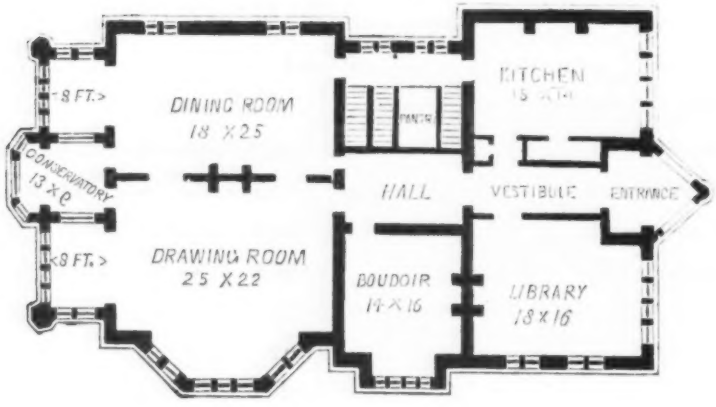
Voted, That the sum of $200 be placed at the disposal of the Committee on the Library, for the increase of the library.

The following gentlemen were elected members: A. C. Bowditch, life; Wm. Underwood, T. R. Marvin, B. K. Bliss, and Rev'd T. M. Clarke, subscription.

E. C. R. Walker,
Recording Secretary.



VILLA IN THE TUDOR STYLE.



PRINCIPAL FLOOR.

[Hort: June, 1849.]